NOVEMBER 3, 1934

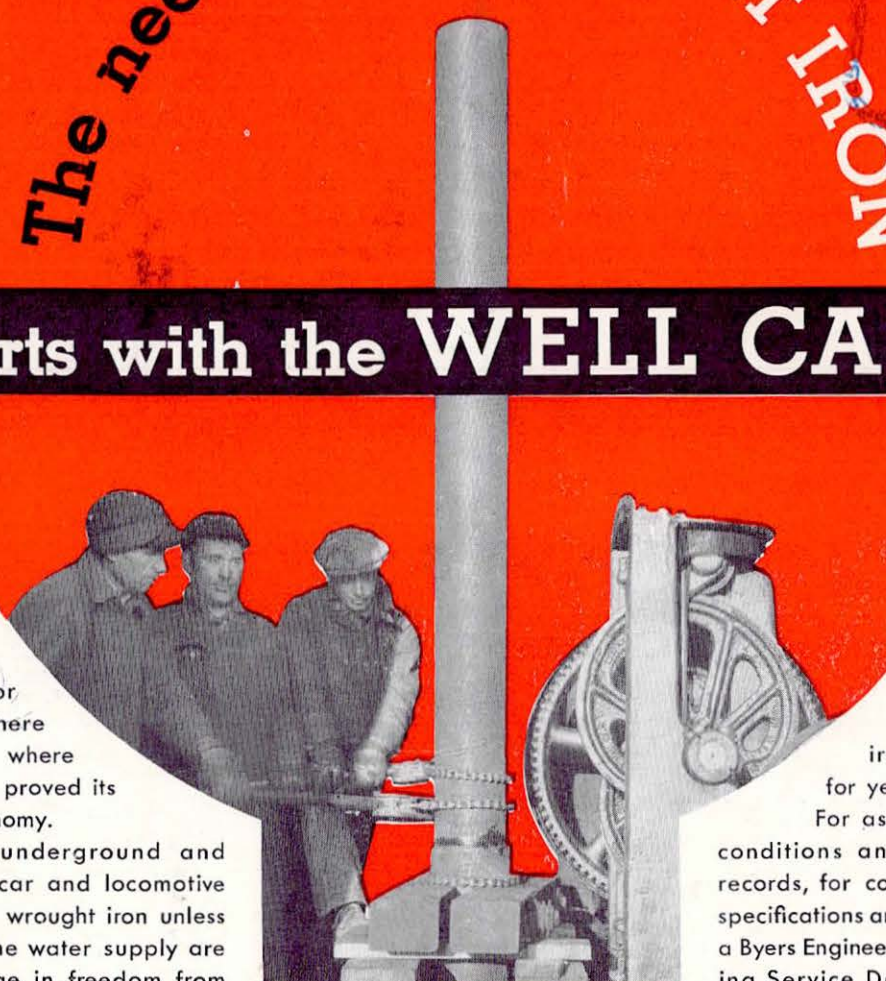
Railway Age

Founded In 1856

GENEVA COLLEGE LIBRARY
BEAVER FALLS, PA.

The need for WROUGHT IRON

. . . starts with the WELL CASING



• *104 feet of 8" Byers Wrought Iron Pipe being installed as well casing at Scotland, South Dakota by Chicago, Milwaukee, St. Paul & Pacific Railroad.*

FROM the source of a railroad's water supply to the last spigot or steam exhaust, there are many places where wrought iron has proved its long life and economy.

Water wells, underground and building piping, car and locomotive piping—all need wrought iron unless conditions and the water supply are far above average in freedom from corrosion.

Leading engineers follow two important steps in determining where wrought iron should be used. First, they analyze the conditions under which the pipe must serve and, second, they select wrought iron for those services where its long record proves it best.

This engineering procedure eliminates blanket specifications and avoids substituting some other material on the jobs that wrought iron has done so well for years.

For assistance in analyzing conditions and reviewing service records, for copies of wrought iron specifications and estimating prices, ask a Byers Engineer or write our Engineering Service Department. Copies of A. S. T. M. Report "Quality Standards for Wrought Iron" now available. A. M. Byers Company, Established 1864. Pittsburgh, Boston, New York, Philadelphia, Washington, Chicago, St. Louis, Houston, Los Angeles.

BYERS GENUINE WROUGHT IRON PRODUCTS

PIPE - WELDING FITTINGS - RIVETS - SPECIAL BENDING PIPE - BAR IRON
PLATES - SHEETS - CULVERTS - FORGING BILLETS - STRUCTURALS

STANDARD of QUALITY for 70 YEARS • • • TODAY BETTER THAN EVER

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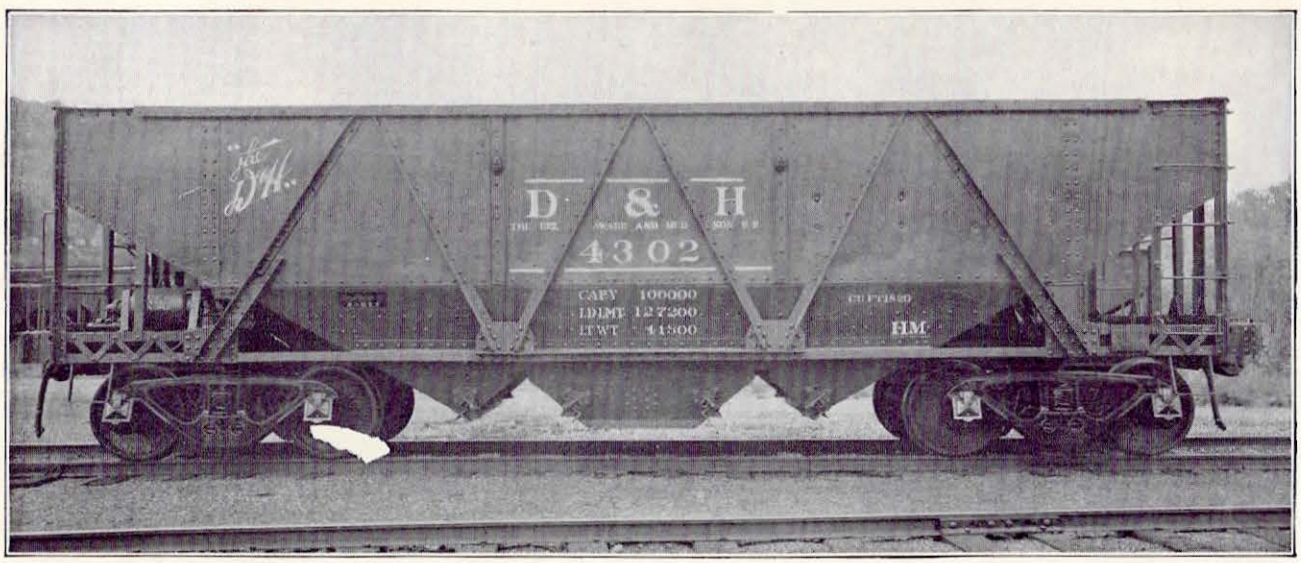
Meeting Present Day Demands For Equipment of Reduced Weight



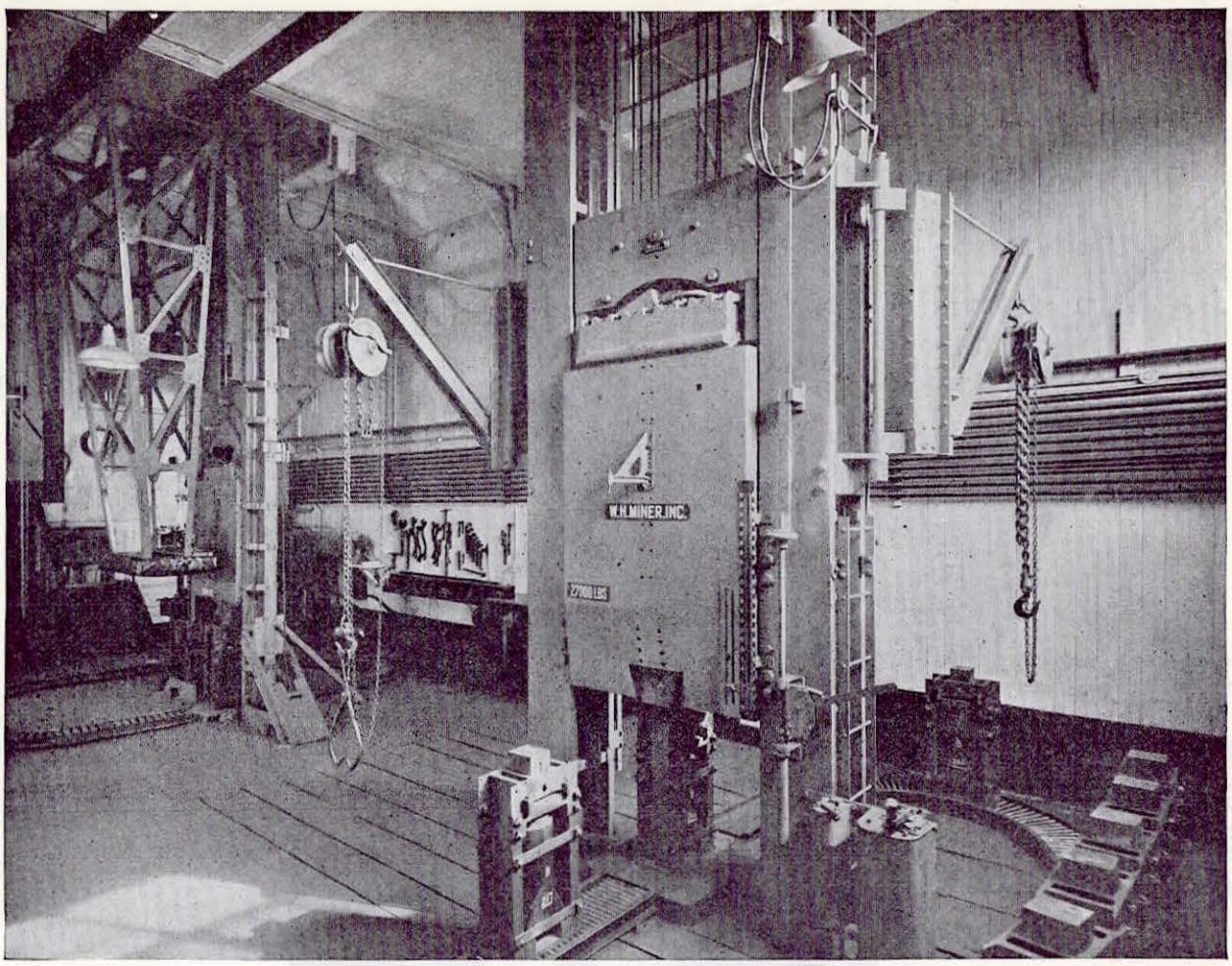
THE use of NATIONAL type B trucks resulting in less dead weight hauled, permits of increased revenue load.

NATIONAL MALLEABLE AND STEEL CASTINGS CO.
General Office — Cleveland, O.

Sales Offices: New York, Philadelphia, Chicago, St. Louis, San Francisco
Works: Cleveland, Chicago, Indianapolis, Sharon, Pa., Melrose Park, Ill.

NATIONAL TYPE B TRUCKS

Published weekly by Simmons-Boardman Publishing Company, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter. January 4, 1933, at the Post Office at Philadelphia, Pa., under the Act of March 3, 1879.



MINER Research Laboratory—

pioneer in the development of scientific draft gear information

The importance of research in the development of railway friction draft gears was realized by W. H. Miner thirty years ago after ten previous years of experience in the spring draft rigging field, and at that time (1904) cooperative investigations of friction draft gear performance were undertaken with Purdue University.

A 1640-pound drop test hammer was then used in studying draft gear action and capacity, but in 1908 the need of heavier testing apparatus was indicated; hence in that year the Miner Research Laboratory was established and the 9,000-pound hammer, shown in the left background of the above illustration, was installed. This hammer has been in continuous operation for twenty-six years, having done considerably more work on draft gears than all other such hammers combined.

In 1930 a 27,000-pound hammer, shown in the foreground, was erected, and this apparatus is equipped to exactly duplicate the conditions established by the American Railway Association laboratory practice now in effect at Purdue University.

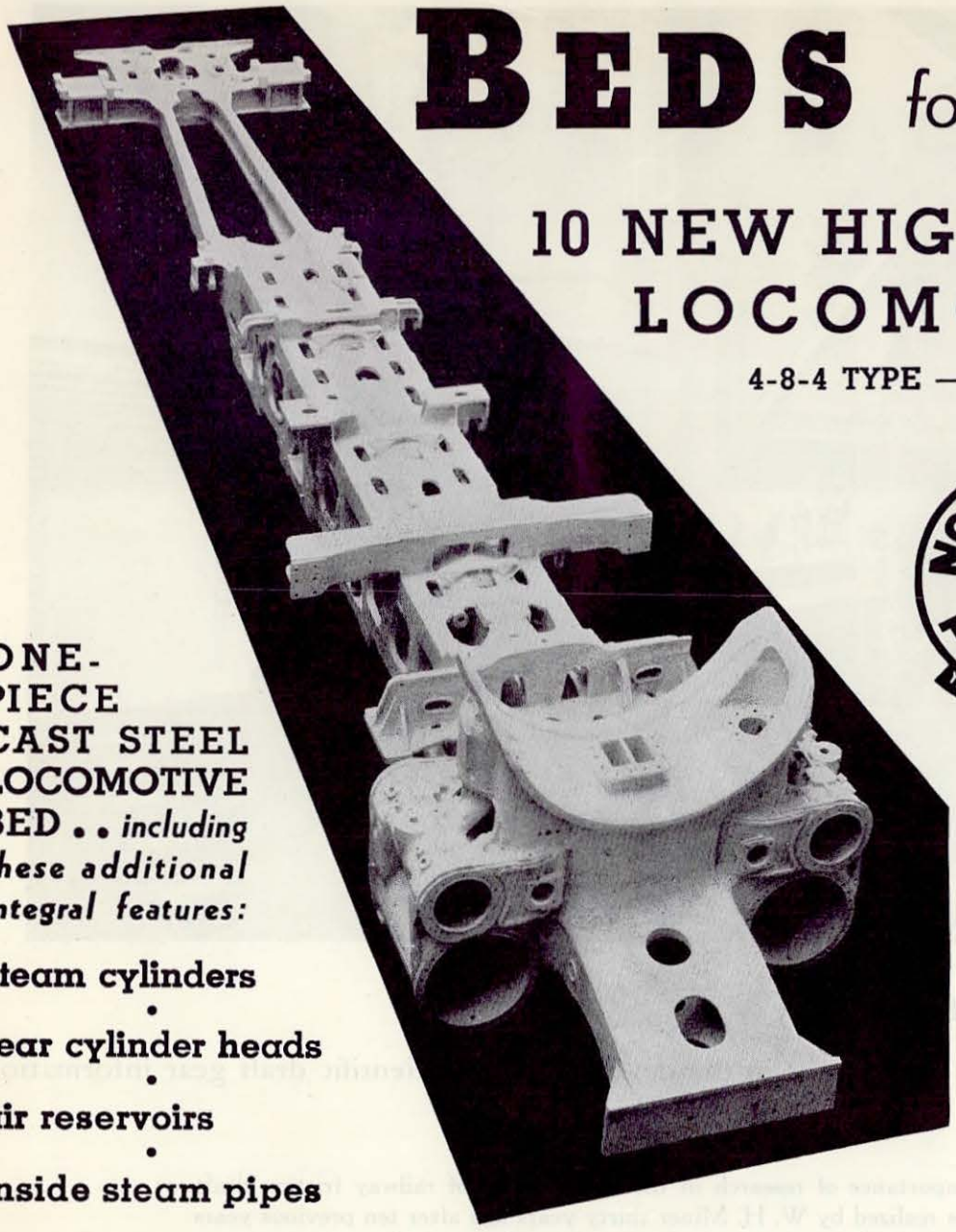
For forty years the Miner organization has kept pace with the demands of the railways for efficient shock protection, and today Miner draft gears not only exceed the specifications of the American Railway Association for certified draft gears, but their performance record in the A. R. A. tests and in service is unequalled.

W. H. MINER, INC. CHICAGO

BEDS for

10 NEW HIGH SPEED LOCOMOTIVES

4-8-4 TYPE — 77" DIA. DRIVERS

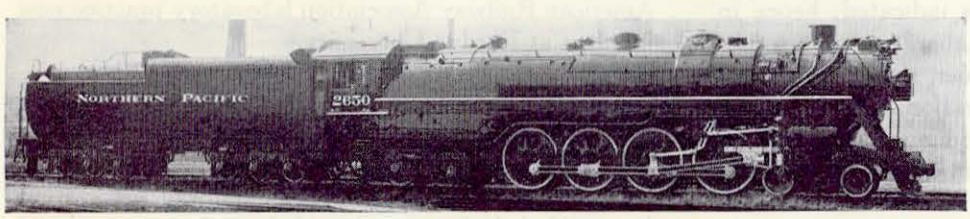


NORTHERN PACIFIC
YELLOWSTONE PARK LINE

ONE-PIECE CAST STEEL LOCOMOTIVE BED . . *including these additional integral features:*

steam cylinders
•
rear cylinder heads
•
air reservoirs
•
inside steam pipes

COMMONWEALTH BEDS ARE ESSENTIAL TO ECONOMICAL LOCOMOTIVE OPERATION



BUILT BY BALDWIN LOCOMOTIVE WORKS

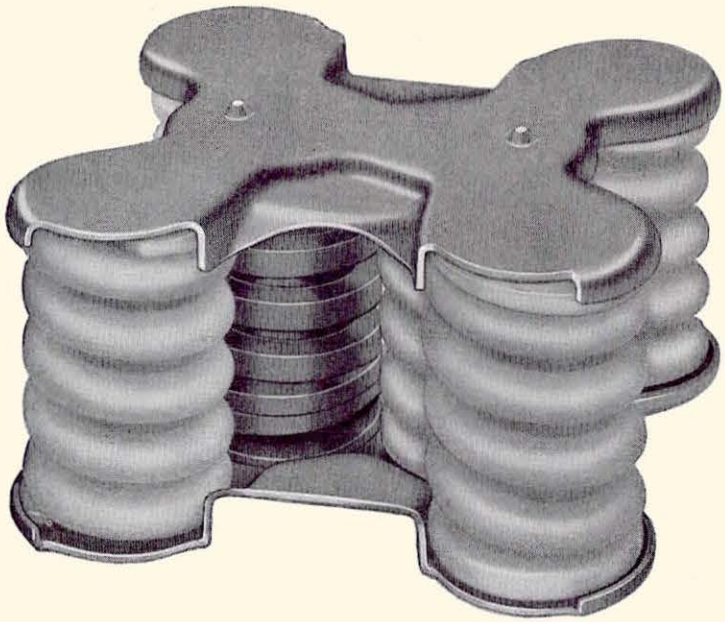
THESE LOCOMOTIVES ALSO EQUIPPED WITH COMMONWEALTH:

Waterbottom Tender Frames
•
6-Wheel Tender Trucks
•
4-Wheel Trailer and Engine Trucks
•
Boxpok Driving Wheels
•
Pilots and Pilot Beams

GENERAL STEEL CASTINGS CORPORATION

EDDYSTONE, PA. TRADE MARK GRANITE CITY, ILL.

CARDWELL FRICTION BOLSTER SPRINGS

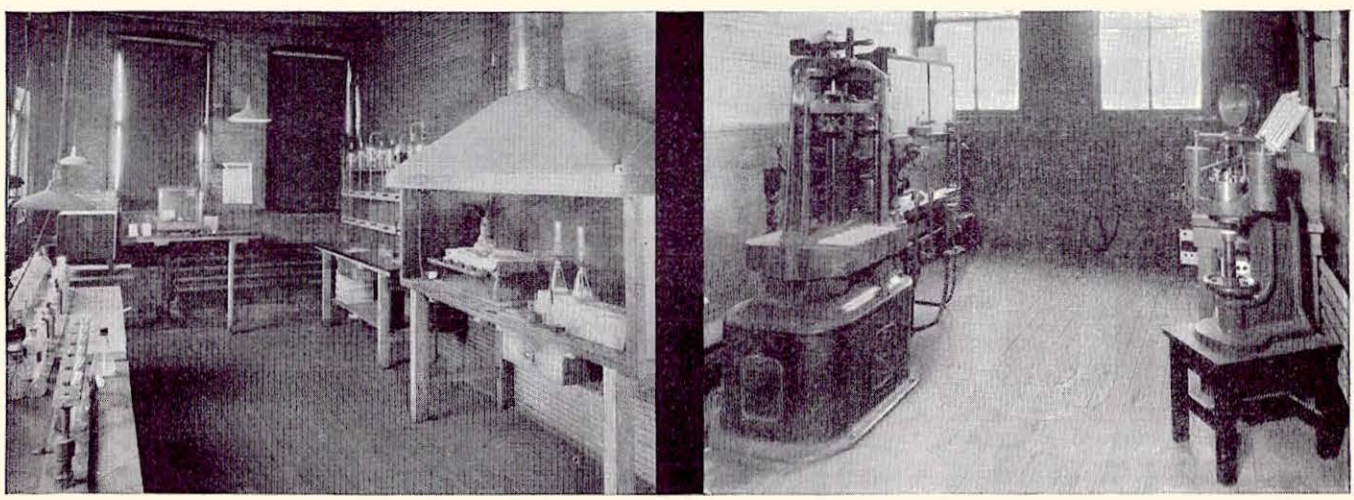


Increasing numbers of Cardwell Friction Bolster Springs are going into service every day.

¶ They reduce damage to cars and lading, and increase operating profits.

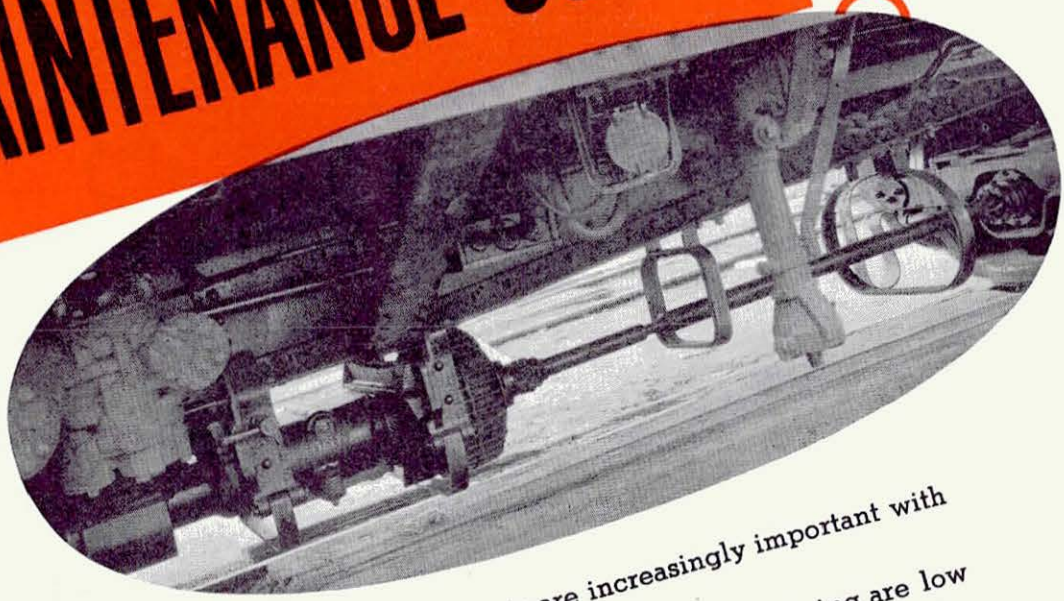
¶ Decrease derailment hazards, making freight train movements safe at high speeds.

CARDWELL WESTINGHOUSE CO., 332 So. Michigan Ave., Chicago, Ill.
CANADIAN CARDWELL CO., LTD., Royal Bank Building, Montreal, Quebec



● Portions of Metallurgical and Testing Laboratories where improvement of Cardwell Devices is constantly being studied.

WHAT ABOUT MAINTENANCE COSTS?



MAINTENANCE COSTS OF AIR CONDITIONING ARE SECONDARY ONLY TO PERFORMANCE . . .

Next to performance, maintenance costs are increasingly important with the wide adoption of air conditioning.

Maintenance costs of the Pullman System of Air Conditioning are low because the transmission of power from car axle is simple and direct . . . axle belt . . . gear box . . . drive shaft . . . speed control . . . compressor belt.

The tremendous load imposed upon batteries by electro-mechanical systems, with the resulting high maintenance costs, is an item which does not exist in the Pullman System. Pullman requires no additional battery . . . the holdover tank provides cooling for station stops and slow speed operation. Direct drive . . . simple power transmission, mean low maintenance costs.

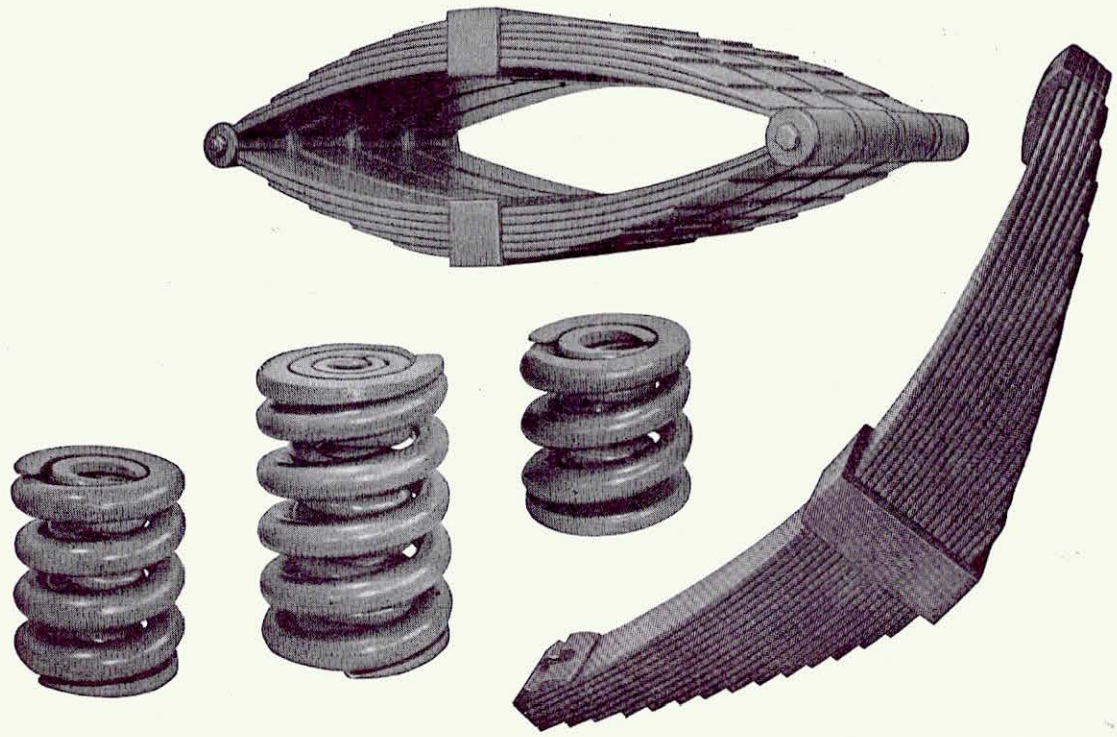
PULLMAN CAR & MANUFACTURING CORPORATION

Pullman Building, Chicago • Russ Building, San Francisco • Munsey Building, Washington, D. C. • Webb Crawford Building, Birmingham

PULLMAN

DIRECT AXLE DRIVE **AIR CONDITIONING SYSTEM**

Quality Springs



During a third of a century the American Steel Foundries has built up a reputation for the designing and manufacturing of springs for railway equipment and industrial purposes. Its plant is equipped with complete modern facilities for double heat treatment of springs to meet the new standard specifications.

Old springs returned for repairs are reconditioned and given the same heat treatment as required by the specifications for new springs. Many railroads are finding it desirable and more economical to have old springs rebuilt in a plant with such facilities than to attempt the work in their own shops.

So important and essential is the dependable operation of springs for all purposes that the selection of a satisfactory source of supply deserves real thought and study.

AMERICAN STEEL FOUNDRIES

NEW YORK CHICAGO ST. LOUIS

G-R-S CENTRALIZED TRAFFIC CONTRO

This report of the A. R. A. Signal Section, gives some interesting indirect savings of Centralized Traffic Control and shows why this modern system is effecting substantial operating economies on many railways.

INCREASED SAFETY AND INTANGIBLE SAVINGS OF CENTRALIZED TRAFFIC CONTROL

Centralized traffic control (C.T.C.), in addition to providing for economy of train operation as measured by reduced operating expenses, provides increased safety and other intangible advantages, which cannot always be directly measured in dollars, but which nevertheless have a true economic value. These intangible advantages add much to the attractiveness of C.T.C. as an investment in operating efficiency even though they do not ordinarily appear as factors on the economic statement made to justify the installation.

The advantages listed below represent some of the intangible savings resulting from the increased efficiency of operation and safety as brought about by C.T.C. on five representative installations:

1. It reduces or eliminates the use of written train orders and the possibility of errors in issuing, transmitting, interpreting, and executing train orders.

2. The use of controlled signal indications as authority for the movement of trains permits of immediate control sufficiently flexible to meet changing traffic conditions with increased facility and safety.

3. It provides more frequent and accurate OSing of the passage of trains throughout the 24 hours. This tends to increase safety and the alertness of engine and train crews because the OSing can be used to check the observance of Stop signals, and speed between OSing points, and performance at various points along the line.

4. With C.T.C. where power-operated switches are used, there is an improvement in safety because:

(a) Reduction in number of stops results in less wear and damage to equipment and, consequently, there is less chance of accidents and personal injury.

(b) Power switch may be used to route trains around obstructed track and may serve to give derail protection to train standing on the main track, awaiting a meet.

(c) Eliminates chances of personal injury to trainmen running ahead of train to open switch, in operating switch, or running to catch train after closing switch.

(d) Eliminates danger of improperly opening switch in front of or under trains.

(e) Trains are kept in motion a greater portion of the time, and the chances of collisions are reduced.

5. Instructions governing the movement of trains are given by signal indications displayed at the point where action is required, by the control operator to the engineman, eliminating intermediary action by other employees. This concentration of control of train movements eliminates individual judgment which cannot always coordinate to the best advantage in the most expeditious and safe movement of trains.

VES A FULL MEASURE OF VALUE

6. It eliminates auxiliary signals, such as train order signals, and improves safety because there is less possibility of misinterpreting signal indications.

7. It proves additional protection for a train working between switches at end of sidings, as often other train can be run around the working train. This form of operation may, in many cases, permit the elimination of yard limits.

8. It provides controlled signals at many points which may be used by the control operator to stop trains when employees report dragging or defective equipment or other unsafe conditions.

9. Its operation shortens the running time over the territory and, consequently, reduces the number of meets per trip, thereby reducing the possibility of accidents.

10. It has brought about a higher standard of maintenance of switches and sidings, increasing safety of operation.

11. Additional protection can be given for the movement of track cars and other maintenance of way department equipment as the control operator can protect these movements by signals.

12. Because there is less standing time on sidings, the "freezing up" of trains in cold weather is less likely to occur.

13. It provides greater safety at times of peak business as the control operator can efficiently direct increased traffic.

14. A check of the accidents occurring on several roads before and after C.T.C. was installed indicates that with it, notwithstanding the elimination of road side train inspection by operators, there has been a decrease in train accidents due to defective equipment.

15. Non-stop meets are frequently made with C.T.C. On some roads this has amounted to more than 50 per cent of the total meets.

16. It increases safety by eliminating the necessity of checking train register and identifying trains at meeting points.

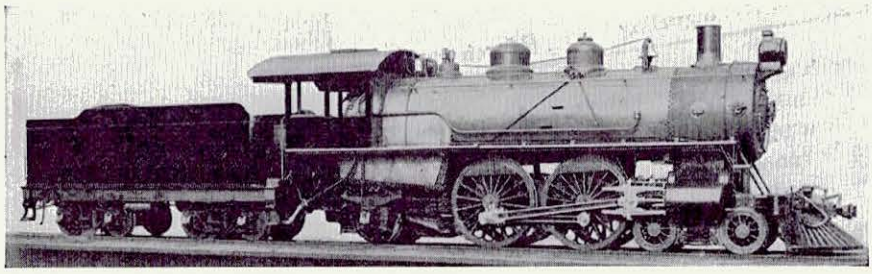
Action Recommended

Acceptance as information.

G-R-S Centralized Traffic Control is a modern system for modern traffic conditions. Why not arrange for a trial installation with our nearest office?

GENERAL RAILWAY SIGNAL COMPANY
ROCHESTER, N. Y.
New York Chicago St. Louis
Montreal London Paris Tokyo Madrid Melbourne Calcutta Buenos Aires
A-1240

A BIG DIFFERENCE IN AGE— BUT BOTH ARE OBSOLETE

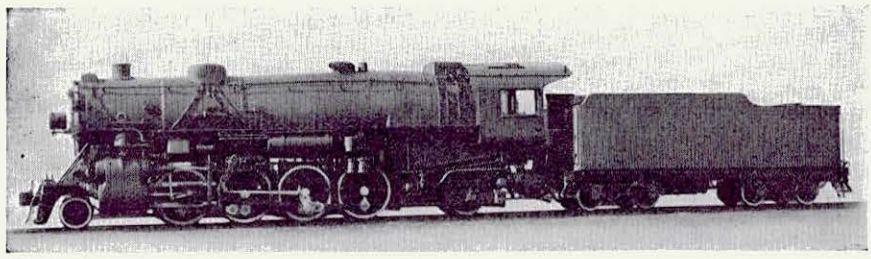


BUILT 1906

Now obsolete because of physical age, low steam pressure, and no superheat

BUILT 1929

Already obsolete because the small drivers are inadequate for modern high-speed service.



THE locomotive requirements for modern high-speed service are high boiler capacity and big drivers.

Many old locomotives may have the big drivers, but it is impossible to give them the necessary boiler capacity. Many newer locomotives have better boiler capacity, but not the large drivers required by present and future speeds.

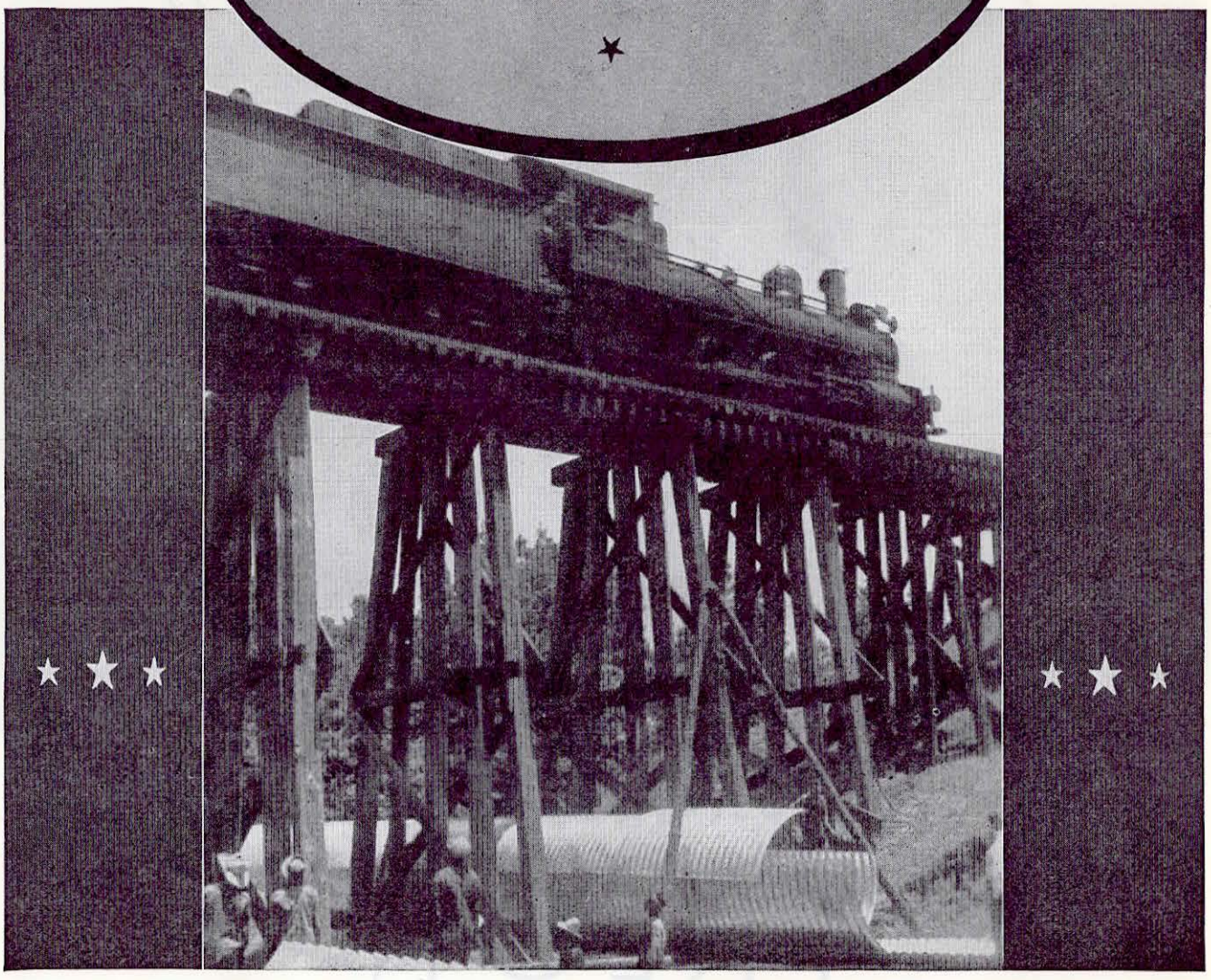
Obsolete locomotives — regardless of age — should be replaced with modern power, to enhance the competitive position of the railroads and reduce operating costs.

It takes Modern Locomotives to make money these days!

THE BALDWIN LOCOMOTIVE WORKS

PHILADELPHIA

Drainage Replacements are Easy *with* ARMCO MULTI PLATE



The last rebuilding cost—this 35-foot high timber trestle was replaced with 100 ft. of 90-in. heavy duty Armco Multi Plate Pipe.

CALL IN AN **ARMCO ENGINEER**

When your trestles, boxes and other large drainage structures need replacing, consider the simplicity, economy and low maintenance cost of super-strength Armco MULTI PLATE.

Whether you need a giant pipe or arch, it can be put in quickly by unskilled labor. And it's sure to last a lifetime!

Let an Armco drainage engineer bring you complete data applying to your own problems.

ARMCO MULTI PLATE PIPE AND ARCHES

INGOT IRON RAILWAY PRODUCTS COMPANY

Middletown, Ohio • Berkeley, Calif.
(Member of the Armco Culvert Mfrs. Assn.)

Philadelphia St. Louis Salt Lake City Los Angeles Minneapolis Houston
Portland Atlanta Denver Chicago Dallas El Paso Spokane

The 20th Century

. . . IS AIR-CONDITIONED WITH

"FREON"

THE 20th Century . . . travelers who once journey eastward or westward on this famous New York Central limited never forget its luxury and speed, its cool, refreshing, air-conditioned comfort!

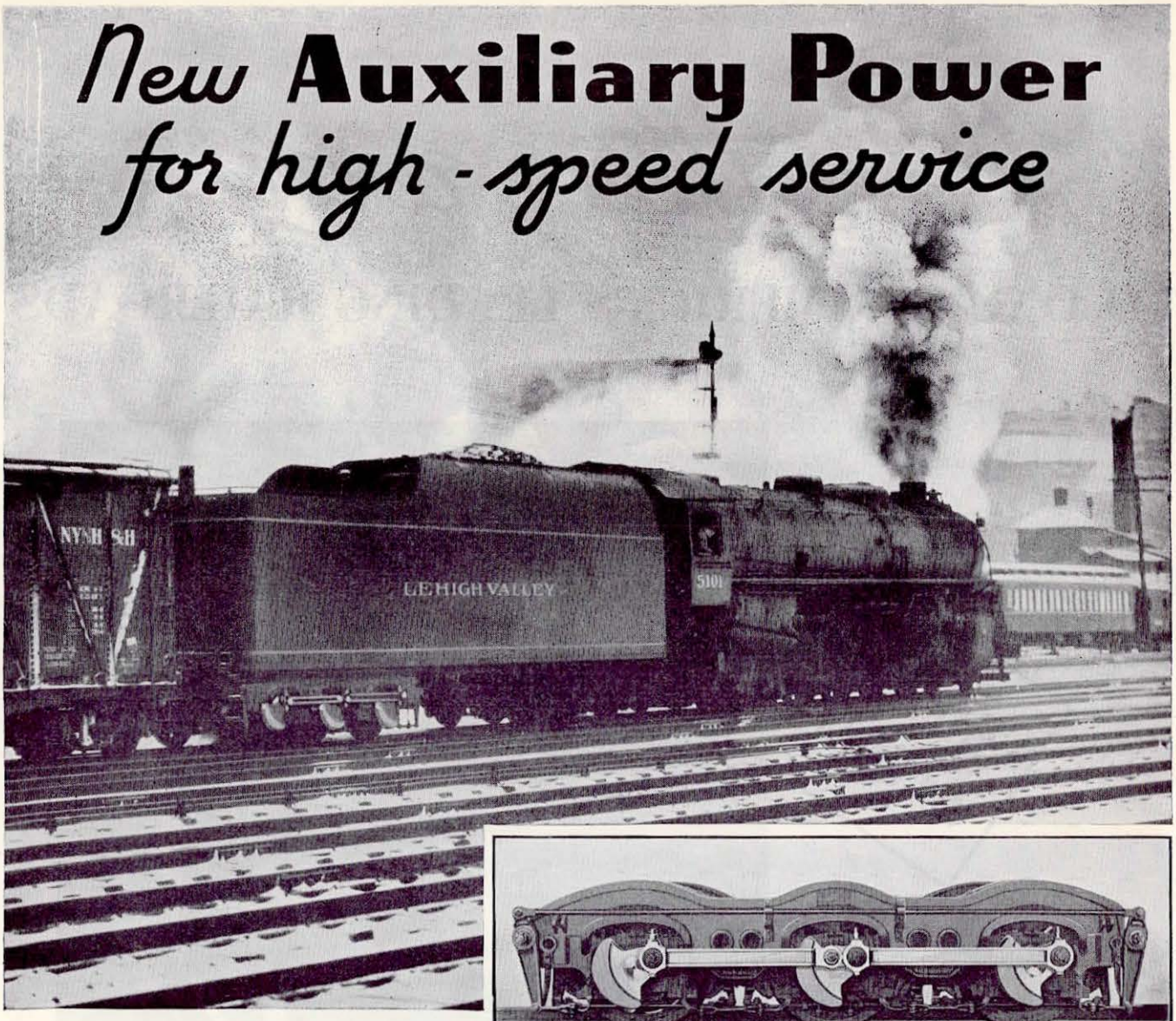
Air-conditioned! That means *coolness* in summer time . . . and a great deal more! It means fresh, invigorating comfort *all year round.* It means that day and night, winter and summer, dust and soot and noise are shut out.

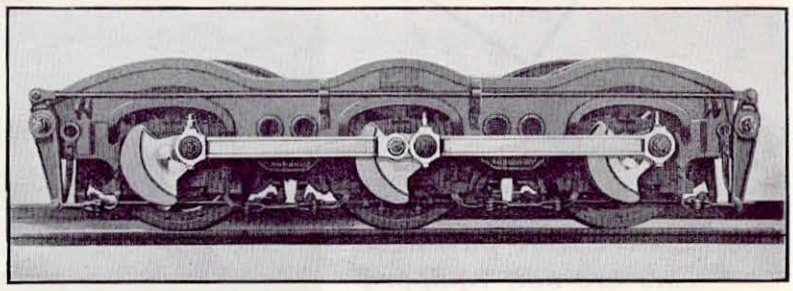
"Freon" is the refrigerant used in the Century's air-conditioning equipment. This refrigerant was selected because, should there be a leak in the system, "Freon" would not endanger health or life of the passengers. On this train there is no odor of wash-rooms or human bodies because of the efficient manner in which the "Freon" air-conditioning system operates. It is for these reasons that "Freon" is used on more than 99% of all mechanically air-conditioned railroad cars today.

FREON
REG. U. S. PAT. OFF.
a safe refrigerant
KINETIC

KINETIC CHEMICALS, INC., TENTH & MARKET STREETS, WILMINGTON, DELAWARE

New Auxiliary Power *for high-speed service*





HERE is the power unit that every high-wheel locomotive needs. This New Bethlehem Auxiliary Locomotive gives powerful assistance in getting a train under way, to a speed well up towards the normal operating range of the high-wheel engine. Its tractive characteristics fit into those of this type of engine, providing starting tractive force on a par with fast-hauling capacity.

Large wheels and short side-rods enable the New Bethlehem Auxiliary to stand any speeds at which the fastest locomotive operates—even up to 100 miles per hour or more. Six driving wheels insure ample adhesion to make use of the full 14,000 to 18,000 pounds of tractive force.

By incorporating this Auxiliary into the design of new locomotives, driving wheels can be made larger. In spite of high speeds, maintenance will be kept down.

By installing one of the New Bethlehem High-Speed Auxiliary Locomotives under the tender of any high-wheel locomotive, a motive power unit is obtained that can work effectively in either fast-freight or passenger service.

BETHLEHEM STEEL COMPANY
GENERAL OFFICES: BETHLEHEM, PA.

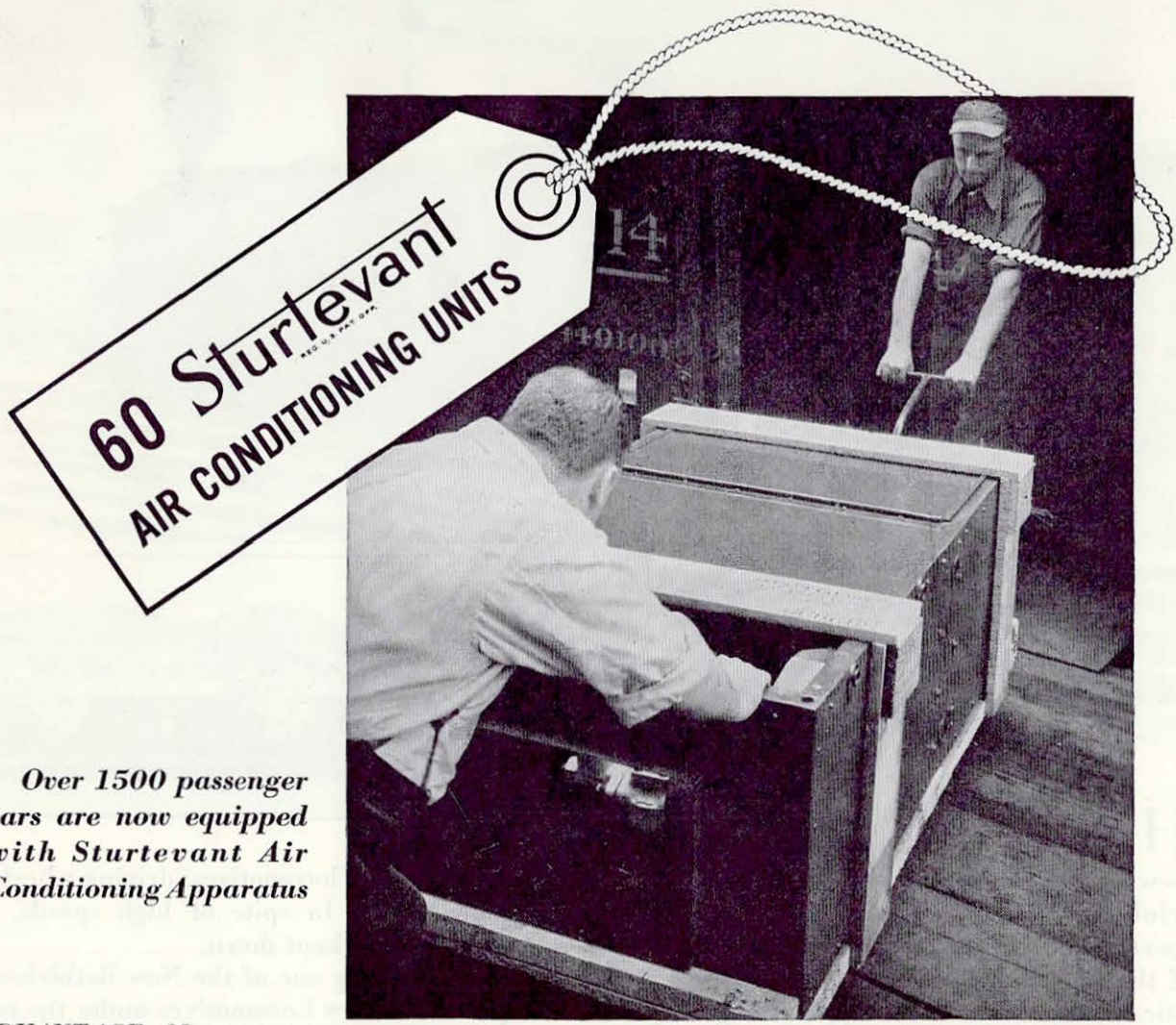
District Offices: Atlanta, Baltimore, Boston, Bridgeport, Buffalo, Chicago, Cincinnati, Cleveland, Dallas, Detroit, Houston, Indianapolis, Milwaukee, New York, Philadelphia, Pittsburgh, St. Louis, St. Paul, Washington, Wilkes-Barre, York. *Pacific Coast Distributor:* Pacific Coast Steel Corporation, San Francisco, Seattle, Los Angeles, Portland, Honolulu. *Export Distributor:* Bethlehem Steel Export Corporation, New York.

BETHLEHEM STEEL

BETHLEHEM AUXILIARY LOCOMOTIVE

On their way

TO ONE OF AMERICA'S LEADING RAILROADS



Over 1500 passenger cars are now equipped with Sturtevant Air Conditioning Apparatus

TAKE ADVANTAGE of Sturtevant Experience. It pays!

You get the benefit of proved performance and of over 20 years of experience in designing and building air conditioning equipment when you use Sturtevant Railway Air Conditioning Apparatus.

Over 1500 passenger cars . . . a large percentage of all passenger cars already air conditioned . . . are now equipped with Sturtevant fans and cooling coils, individually or in combination.

There is no need for any railroad to spend money in costly experimentation or to take chances with unproven equipment, when air conditioning its cars. Sturtevant Equipment in design and construction has demonstrated its efficiency, dependability, and effectiveness on 17 railroad systems.

We would welcome your inquiry for further data.

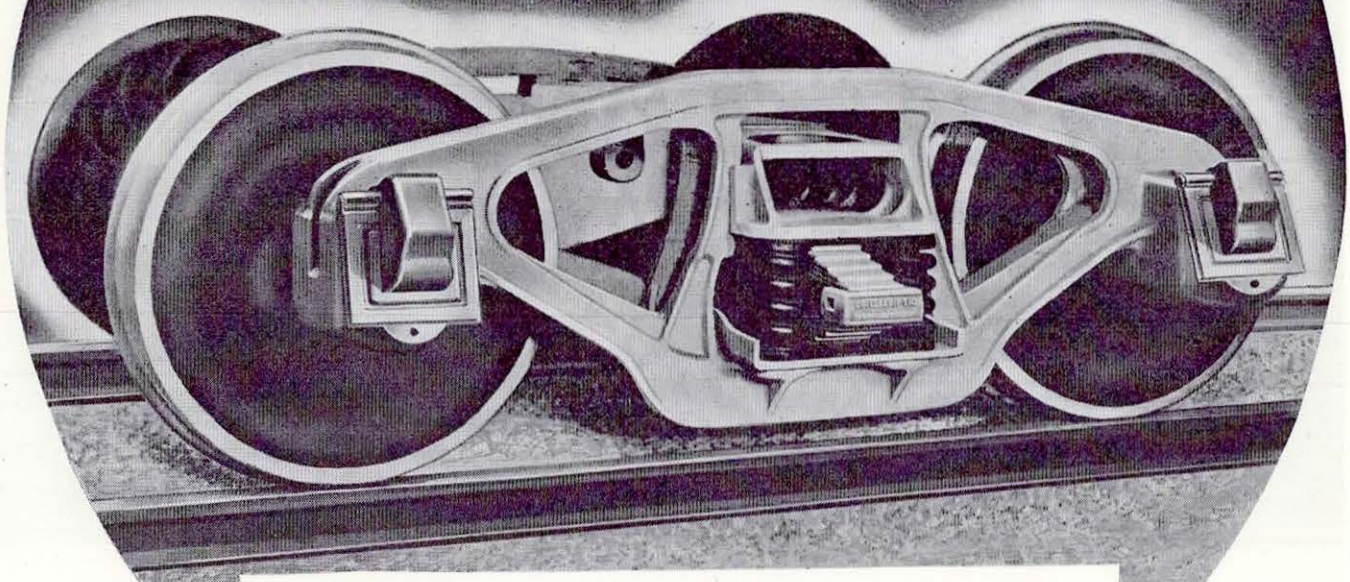
B. F. STURTEVANT COMPANY

Main Offices: Hyde Park, Boston, Mass.

Chicago, Ill., 400 N. Michigan Ave.; San Francisco, Cal., 681 Market St. *Branch Offices in Other Cities*

PIONEERS IN AIR CONDITIONING FOR OVER 20 YEARS

SERVICEABILITY INSURED



THE manufacturers of "Coil-Elliptic" Springs and "Double Truss" Trucks believe that the combination of this controlled spring group and this modern truck will save many times their costs in the elimination or reduction of damage claims, in decreased maintenance and lengthened life of equipment.

And when "Railway" Springs and other "Railway" products are used to round out this well designed and constructed truck, the initial efficiency of the truck is further safeguarded by our long experience and our ultra modern research, testing and manufacturing facilities.

"Railway" products insure the continued serviceability of the whole unit.

American Locomotive Company

Railway Steel-Spring Division

30 Church St. New York

BRANCH OFFICES

Chicago, Ill.
Washington, D. C.
Cleveland, Ohio
Pittsburgh, Pa.
Montreal, Que.
St. Paul, Minn.
St. Louis, Mo.
Denver, Colo.
San Francisco, Cal.

Experimentation is all right . . . *within bounds*

Why
AMCRECO PRODUCTS
have maximum quality

1. Carefully selected timber.
2. Incipient decay avoided.
3. Framing before treatment.
4. Preservative of known value.
5. Adequate treatment.
6. Treatment accurately timed to proper seasoning.
7. Unequalled facilities and personnel of the leading producer.

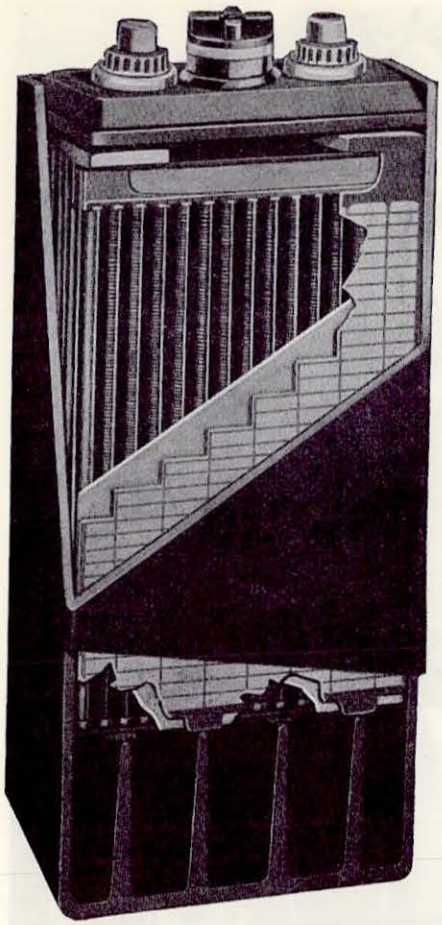
In the field of wood preservation, long years of service are essential to establish the merits of a preservative. The standard preservatives have won their place through results obtained in the true test of large quantities in long years of service under varying conditions. While further experimentation is desirable, it should be recognized as such and not extended to large quantities of material in important work. The excellent results continuously obtained from timber products well treated with standard preservatives preclude the necessity for large scale experimentation in this field.

NRA MEMBER U.S. WE DO OUR PART

AMERICAN CREOSOTING COMPANY
INCORPORATED

COLONIAL CREOSOTING COMPANY INCORPORATED — AMCRECO LOWRY PROCESS CREOSOTED WOOD — GEORGIA CREOSOTING COMPANY INCORPORATED

LOUISVILLE — KENTUCKY



WHEN IT'S AN EXIDE YOU START

Exide-Ironclads for Diesel and gas-engine starting

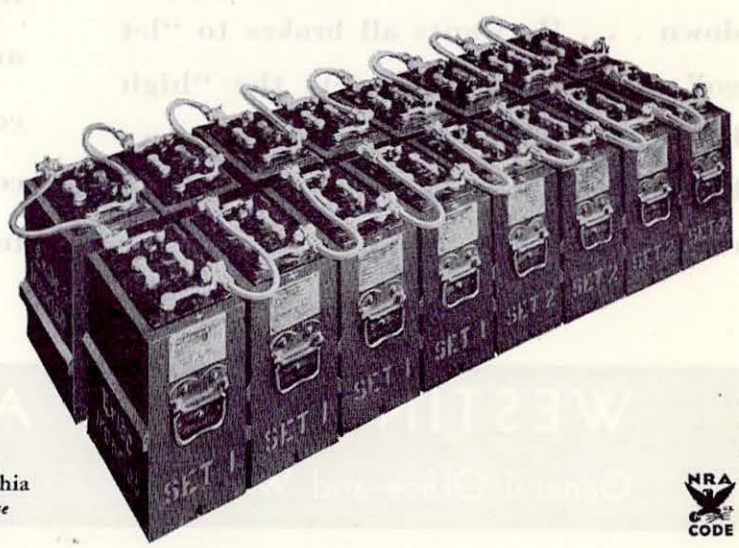
Diesel and gas-engine starting is one of the severest of all battery requirements. Perhaps no other application demands greater dependability in a battery. A storage battery failure means a failure of the motor car or locomotive to start. Traffic may be badly delayed in passenger service, and the movements of other trains interfered with.

Starting service is unusual in that it makes periodic extreme demands on a battery. Exide-Ironclads are so designed that they can repeatedly supply the high power rates required. They can discharge at a high ampere rate, and at the same time maintain a high terminal voltage, providing abundant torque or starting power.

Cold weather increases these requirements, emphasizing the advantages of Exide-Ironclad Batteries. Due to their rugged construction, the exclusive design of their positive plates, and the use of the new Exide Mipor Separators, these batteries offer exceptionally long life along with proved dependability and economy. Write for folder giving full details on the new Exide Mipor Separator . . . the permanent storage battery plate insulator.

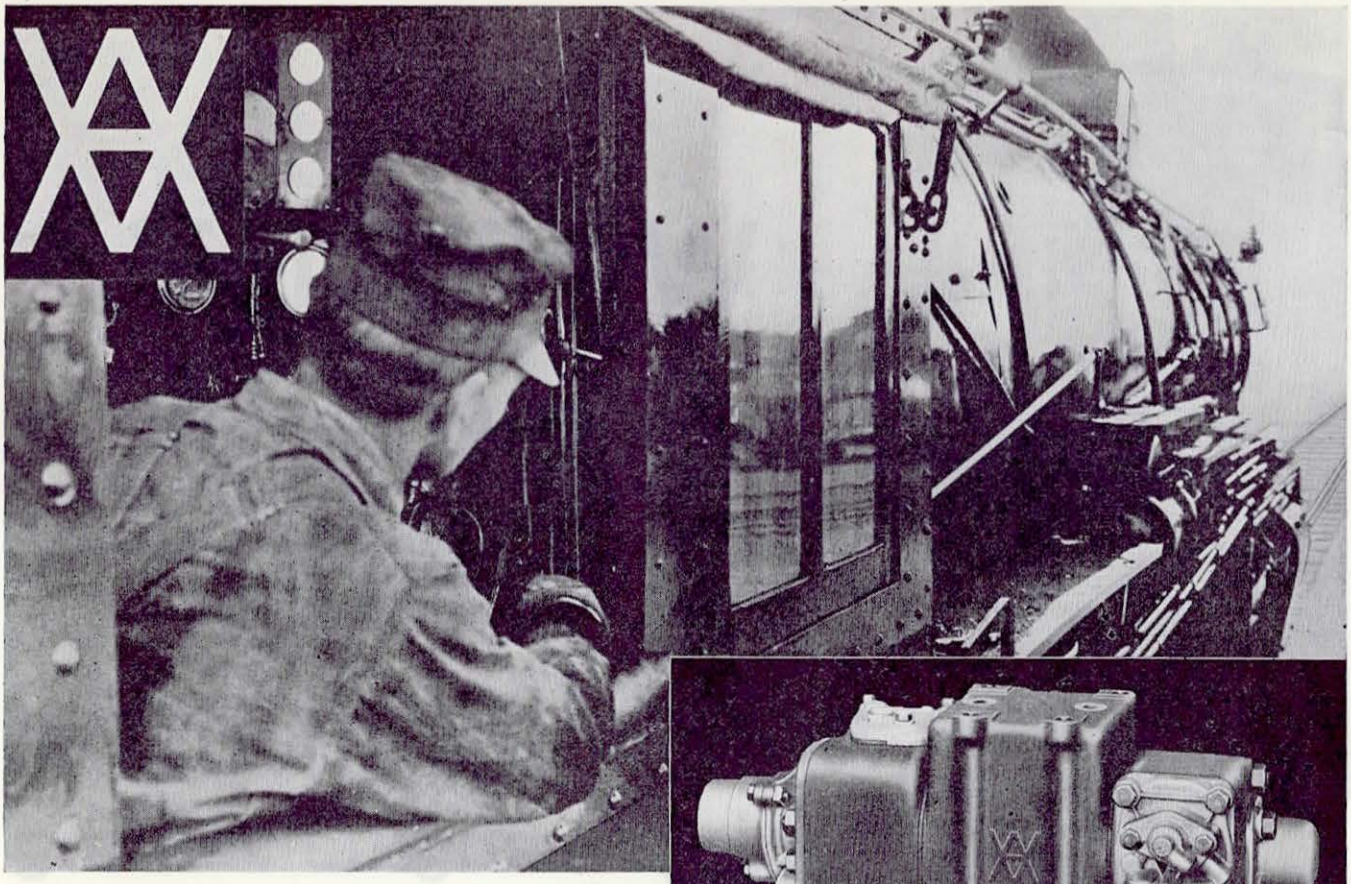
Exide
IRONCLAD BATTERIES
WITH EXIDE MIPOR SEPARATORS

"MIPOR," Reg. U. S. Pat. Off.



THE ELECTRIC STORAGE BATTERY CO., Philadelphia
The World's Largest Manufacturers of Storage Batteries for Every Purpose
Exide Batteries of Canada, Limited, Toronto

NRA CODE



Enginemen Appreciate the NEW "AB" Brake

THE engineman wants all brakes in his train to "take hold" when he "goes after them" for a stop or slow-down . . . He wants all brakes to "let go" quickly when he gets the "high ball" . . . He wants a powerful reserve braking force that will respond to emergencies.

What the engineman wants a brake to do, the new "AB" equipment does. It responds to his intent in every situation, and provides complete and accurate control of his train, giving him renewed confidence in his ability to safely speed to the terminal on time.

WESTINGHOUSE AIR BRAKE CO.

General Office and Works « » WILMERDING, PA.

(1272)

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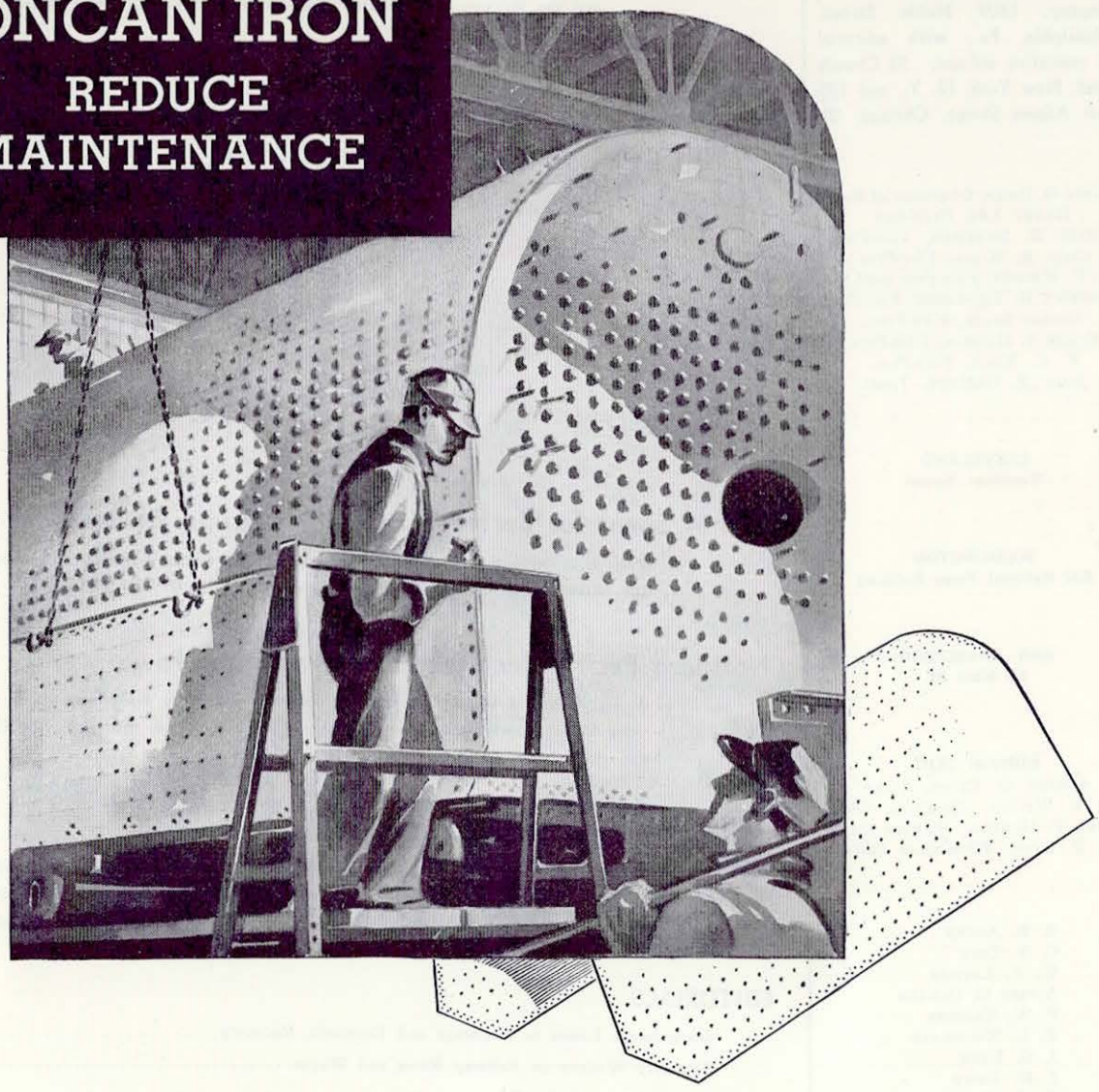
Firebox Sheets of
TONCAN IRON
REDUCE MAINTENANCE



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RAILWAY AGE

Government Loans to Railways and Economic Recovery

Statements recently made by President Roosevelt and Chairman Jones of the Reconstruction Finance Corporation indicate willingness of the government to increase its loans to the railways. The purpose would be to promote economic recovery by saving railways from bankruptcy and enabling them immediately to increase their buying from the durable goods industries. It is significant that the question whether the railways should accept more government loans raises almost all the issues presented by the New Deal in business and the Old Deal in transportation.

Why cannot many railways refund their existing indebtedness and pay interest upon it without more borrowing from the government? Why should they be dependent upon government loans for money with which to make needed improvements and even needed expenditures for maintenance? Because their gross earnings are too small even for adequate maintenance and their net operating income is too small and their credit too poor to raise private capital. Why do these conditions exist? Because of the depression and recent intensification of it, and because of government policies regarding them and other carriers which render the railways unable to make as much of either gross or net earnings as they would make under fair government policies even during the depression.

What would be the purposes of railways in accepting additional government loans? First, to prevent bankruptcy of some until they could make enough net earnings to avoid it. Second, to enable them to make expenditures now for improvements and maintenance which would be made later anyway if earnings would then justify them. Third, to increase buying from the durable goods industries now and thereby hasten general economic recovery.

Government Loans and Railway Net Return

These questions and answers demonstrate a fact of vital importance. This is, that the only justification for increased borrowing by the railways from the government would be confidence of their managements in an early and large increase in their net operating income. More borrowing to meet funded debt and interest, if not soon followed by an increase in net operating income, would merely postpone bankruptcies and make larger the indebtedness of the borrowers when they came. Borrowing to increase expenditures for improvements and maintenance, if not soon followed by an increase in net operating income, would only temporarily stimulate the durable goods industries. Increased railroad borrowing from either the government or private sources, if not soon followed by a large increase in net operating income, would make the railway financial situation worse and be of no lasting benefit to general business. The vital question, then, as respects whether railway borrowing should be increased is whether there are or soon will be reasons why railway managements should be confident of an early and substantial increase of net operating income.

Whether and when railway net operating income will increase, and how much, depend principally, first, upon whether and when there will be a substantial improvement in general business and consequent increase of traffic; and, second, upon whether and when government policies will be adopted to equalize terms of competition between the railways and other carriers and thus enable the railways to recover traffic that prevailing unfair government policies have caused them to lose.

What Will Be Done to Improve General Business?

First, then, what is necessary and probably will be done to renew the revival of general business and traffic? Numerous expressions recently have come from Donald R. Richberg and others high in the councils of the New Deal intended to reassure or warn business. Mr. Richberg has said in substance that government policies are not inimical to the system of private enterprise and profit; that the foundation for recovery has been laid by the New Deal; that business men should now take courage and go ahead and revive business; and that if they do not there will be no justification for complaints by them later if the government increases its expenditures and taxation for public works and relief. Mr. Richberg, although prominent in the administration, is not a source from which such emanations naturally tend to inspire business confidence and enthusiasm. His record as a radical, the economic views many times expressed by him, his ignorance of business and his intimations that unless business takes his advice its future may be worse than its present constitute him a Moses of recovery of whose leadership toward the Promised Land business may naturally be dubious.

What business wants is not mere language from any source which may be interpretable as either

promise or threat, but to know what opportunity it is going to have to raise and invest capital and to make profits upon both present and future investment. The American Federation of Labor is demanding further reductions of hours and advances in wages. Is the government going to favor or oppose labor policies that would further curtail profits by increasing production costs and increasing the power of labor leaders in industry? What is going to be its future policy about taxing private business to raise money to be invested in competition with private business? Is the government going to continue to pad its expenditures by, in many cases, paying relief to the unemployed in excess of the wages of the employed? Is the Securities Act to be continued in a form or administered in a way that will hinder raising private capital? Is the government going to begin trying to balance its budget by reducing its expenditures? Are policies going to be followed which will stabilize currency or lead to inflation? Is government going to reduce its interference with business or increase it for the purposes of a planned economy? These are the kind of questions that must be answered satisfactorily to business men generally before they will recover their confidence and begin to go ahead again.

What Will Be Done for the Railways?

Questions similar to these about the New Deal in business are being asked by financiers and railway executives regarding the Old Deal in transportation. The answers made by policies actually adopted to questions regarding both the New Deal in business and the Old Deal in transportation will largely determine how much traffic the railways will have, what their operating expenses will be, what net earnings they will make, and therefore what loans they will be justified in accepting from the government and how much employing and buying from the durable goods industries they will be able to do.

Will legislation be passed to equalize the regulation of all carriers, either by reducing railway regulation or increasing the regulation of other carriers, or by both means? Will federal and state action be taken to reduce or abolish the subsidies received by carriers that compete with the railways? Will it be the policy of the government to help equalize the labor costs of railways and competing carriers, either by reduction of the former or increase of the latter? Will the government continue to favor labor and other policies affecting both industry and railways that increase railway operating expenses, and if so, will it be its policy to let the railways make changes in rates needed to offset increased costs?

The administration is by no means solely responsible for the conditions which within recent months have caused a decline of railway traffic and an increase of railway operating expenses. Are business men who have actively participated in carrying out N R A policies which have helped to produce these conditions going to reverse themselves? And are they going to favor or oppose government policies necessary to establishing fair and equal terms of competition between the railways and other carriers?

Increased Profits Essential to Business Confidence

The prevailing lack of confidence in business is not due principally to radical theories, whoever may have espoused them, but to incontrovertible facts. Of these facts the most important fact is that an improvement in general business of 30 per cent as measured by freight car loadings occurred between July, 1932, and July, 1933, while since then the general trend has been downward with the result that since June car loadings have been continuously less than in 1933 and in October were less than in either 1932 or 1933. Because of the decline of general business total employment in September, according to the American Federation of Labor, was less than in September, 1933. Another important and unquestionable fact is that the recent decline of business and employment has been due to mistaken policies of government, business and labor—policies based upon the assumption that inflation, huge government spending and reductions of working hours and advances in hourly wages would stimulate recovery, although all the economic experience of the world and the expressed opinions of almost all economists of reputation indicated that they would have the opposite tendency.

The only way out is clear. This is to change economic facts and prospects by changing government and business policies. The durable goods industries are the key to the present situation. Most buying from them is directly or indirectly done with the profits of other industries. Therefore, a large and lasting increase in buying from them can be accomplished only by increasing the profits of the railroads and other industries. Increase of profits in general business is dependent upon increases in the volume of production and commerce unaccompanied by corresponding increases of operating costs until production and commerce approach normal. Every means or measure which, while recovery is the paramount problem, increases the volume of production and commerce without correspondingly increasing costs will stimulate recovery. Every means or measure which, while recovery is the paramount problem, increases costs in industry and commerce will, by hindering increase of profits, hinder increase of the volume of production and commerce; and there can be no real recovery, and consequently no large and lasting increase of employment in private business, without a large and lasting increase in the volume of production and commerce.

Increased Net Profits Essential to Railway Confidence

The railways are among the largest customers of the durable goods industries. They are, therefore, one of the principal industries an increase of whose buying from these industries is indispensable to recovery. They can increase their buying only with money that is either borrowed or earned; and they can be justified in increasing their borrowing and expenditure of government money only if and when there is again occur-

ring and promises to continue to occur an increase in their own net operating income. President Roosevelt and others high in his administration recently have been saying reassuring words to business. There is reason to believe that they realize now as never before that an increase in the profits of industries that buy from the durable goods industries is essential to a renewal of recovery and reemployment, and that, among other things, they will advocate policies tending to increase the earning capacity of the railroads.

But the managements of railways and other kinds of business must deal with realities. The railways should try to help promote recovery in every way they can that is consistent with present and prospective realities, whether by borrowing and spending more government money or otherwise. But what they do in future should be, and undoubtedly will be, based upon the reality most vital to them—that is, their own actual and prospective net operating income. Their net operating income in June, July and August was 37 per cent less than in 1933. In September and October it was less not only than in 1933, but even than in 1932. They cannot help general recovery, whether by increased borrowing from the government or otherwise, as long as they themselves are being pushed back into a new depression by government, business and labor policies that disregard their rights and interests.

Secretary Wallace on Railway Rates and Wages

Secretary Wallace has written a book* which everyone seriously concerned about the future of the country, and its economic future in particular, can profitably take the time to read. Mr. Wallace is the possessor of a great deal of learning and an extraordinary degree of honest piety. His position being what it is in the Administration, his views have an importance quite apart from any intrinsic qualities which may attach to them. He is not particularly friendly to the railways nor to railway labor. Railway rates, to him, are one of the parts of the economic structure built "half of steel and half of putty" which refuse to decline when the general price level declines.

The competition of government funds spent on highway and waterway development which diverted traffic from the railways and made it impossible for them to reduce rates and still stay, in part, solvent, he neglects to consider. He shows little sympathy with the level of railway wages. The farmer's attitude toward it he states as follows: "The government made it possible for the railroads to hold up railroad rates to a point that railroads could pay their workers twice their prewar wages. Why shouldn't the government hold up prices of farm products so that farm labor also could be paid twice what it got before the war?"

In another place also, he sets forth with evident approval the extent to which well-paid railway labor has been thrown out of work by low-priced farm trucking. Secretary Wallace with all his sincerity and all his scholarship has not been able entirely to escape bias in his ethical judgments. The limitation of agricultural production he defends as an expedient, made necessary to give farm products the protection afforded manufactures by the tariff and of other goods and services by monopolistic control of production and prices. At the same time, letting the farmers have their cake and eat it too, he sympathizes with their effort to bring down transportation rates and wages to the ruinous levels from which agriculture has suffered and from which he has striven so valiantly to rescue it. He does not view the railroads with the same leniency, nor consider the possibility that their rate policy may also be an expedient made necessary by government policies over which they have even less control than the farmers have over tariff policies. Sauce for the farm goose is not to be sauce for the railroad gander—not if Secretary Wallace can help it.

He sees clearly, however, the obstacle of an unbalanced price structure to recovery—some commodity prices being so low that the incomes of their producers are insufficient to enable them to make normal purchases from producers whose products remain high in price. This difficulty is fundamental. His method, however, of meeting the situation is not to enforce a return to "market place" determination of prices, but further governmental control. "With the situation that exists and is likely to exist in the United States for the next ten years," he says, "the chief objective of our democracy should be so to manage the tariff, and the money system, to control railroad interest rates; and to encourage price and production policies that will maintain a continually balanced relationship between the income of agriculture, labor, and industry."

The judgment of the market place, however, is the only method of testing economic values in a way to direct capital and human energy into channels which will fulfill human wants to the highest possible degree. If the market place does not actually exist, its hypothetical operation at least ought to be taken into account by those who control prices, production and capital expenditure. The spending of a large part of our national income, as the government is now doing, on waterway, highway and hydro-electric projects, the beneficiaries of which do not want them badly enough to pay for them, is the antithesis of control of our economic forces in the interest of general well-being. We cannot get balanced economic relationships in this way. It ought also to be made clear whether Secretary Wallace is speaking for the Administration when he suggests that railway wages are too high. Reduced railroad interest rates, which he favors without indicating how he would reduce them, would not permit much lower railroad rates with wages at present levels.

* "New Frontiers", by Henry A. Wallace, Secretary of Agriculture, Published by Reynal & Hitchcock, Inc., New York.

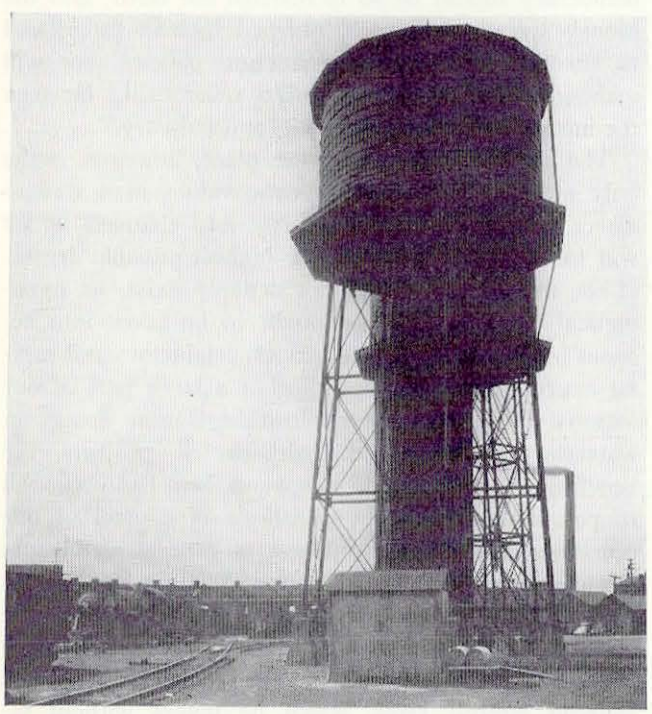
Money Spent for Better Water Brings Large Return

Outlay for boiler maintenance greatly reduced on C. & E. I. by carefully supervised treatment of all supplies

IN 1933 the locomotives on the Chicago & Eastern Illinois were operated an average of 83.3 miles for every man-hour of boiler makers' time required for their maintenance, whereas the corresponding figure in 1930 was only 39.6 miles. In 1933, also, locomotives were operated an average of 3,105 miles between washouts, compared with 602 miles in 1930, and 586 miles in 1931. These figures are typical of a number of statistical comparisons that are cited by officers of the road as demonstrating the economies that have been effected as a result of a change in water treatment practices introduced in 1931. A primary feature of the program of water conditioning adopted at that time is that it called for the treatment of water at all stations retained in service, 10 stations of low consumption, including one supplying water of unusually poor quality, being abandoned in the furtherance of this project.

Take Water at 52 Stations

The lines of the C. & E. I., which extend from Chicago to Evansville, Ind., St. Louis, Mo., and Chaffee, are now served by 52 water stations. At 18 of these water is purchased from municipalities, at 5 it is obtained from the supplies of other railways, and at 29 the water is delivered by company-owned pumping stations from well, stream or reservoir supplies. The quality of the raw water delivered covers a wide range. The sulphate or hard scale-forming hardness varies from a trace to 25.4 grains per gallon, the total hardness from 1.8 to 51.0 grains and the sodium salts from 0.5 to 24.6 grains.



Storage Tank at Yard Center, Ill., Chemical Storage House in Foreground

Various measures have been applied in the past in efforts to improve the quality of the water entering the locomotive boilers, but because of failure to treat all the waters used, or to provide adequate supervision or because of other reasons these efforts, while producing some betterment in the water, did not result in the desired improvement in boiler performance or effect the anticipated reductions in boiler maintenance expenditures. This situation gave rise in 1931 to a search for other means of water treatment.

As a consequence the C. & E. I. entered into a contract with the National Aluminate Corporation, Chicago, under which the latter has assumed complete responsibility for the treatment of all water delivered to the railroad's locomotives except to passenger power at Chicago and St. Louis, where the C. & E. I. is a tenant of terminal railroads. This contract covers the analysis of the various waters, the determination of the treatment required, the furnishing of the chemicals used and the maintenance of the requisite supervisional staff to check the results obtained and institute corrective measures whenever necessary.

All Supplies Were Investigated

Prior to the execution of this agreement, the contractor's technical staff made a survey of the water service facilities of the system for the purpose of determining the nature of the problem imposed, and after the contract was let the contractor instituted a plan for the treatment of water at all the stations except those which, as previously stated, it was deemed advisable to abandon. The system of treatment adopted involves the introduction of the requisite chemicals into the roadside storage tanks by means of proportioners designed to deliver the chemicals at a rate determined by the volume of the discharge of the raw water. The chemicals, which are used in various combinations and proportions to meet the requirements of the various waters, include sodium aluminate alone or combined with other reagents.

At eight stations, the chemical is furnished in liquid form and introduced through the agency of Nalco proportioners, while at the others it was supplied in the solid or "ball" form, the proportioning being effected by means of ball feeders. One exception to this practice concerns the treatment of water for the locomotive on a mine run over a light-traffic branch line. In this case the chemicals are dumped into the cistern of the tender at the terminal and the engine crew is provided with an additional supply of chemical in a small tank with instructions to pour the contents into the cistern when water is taken at a station on the branch. In addition to the treatment of water for all locomotives in service on the road, the water used at two large power plants is being also conditioned by the same methods.

Owing to the fact that many of the water stations

have been equipped with pumps operated by electric motors under automatic or remote control, pumpers are in attendance at only four stations. At all other points attendance is confined to weekly visits by maintainers, who in addition to checking the pumping equipment, and recharging the chemical feeders, adjust the treatment in accordance with instructions issued, and take samples

Table I—Boiler and Fire-Box Maintenance

Year	Locomotive Miles	Boiler Makers' Time Man-Hours Back Shop	Roundhouse	Total	Cost of Boiler Material Issued
1930	7,078,859	40,318	138,584	178,902	$24,470
1931	5,952,665	29,843	119,507	149,350	14,749
1932	5,126,979	13,689	92,547	106,245	7,144
1933	5,194,094	17,757	44,525	62,282	2,516

Table II—Record of Boiler Washing

Year	Locomotive Miles	No. of Boilers Washed
1930	7,078,859	12,066
1931	5,952,665	8,334
1932	5,126,979	2,547
1933	5,194,094	1,673

of the treated water each week, and of the raw water when so instructed.

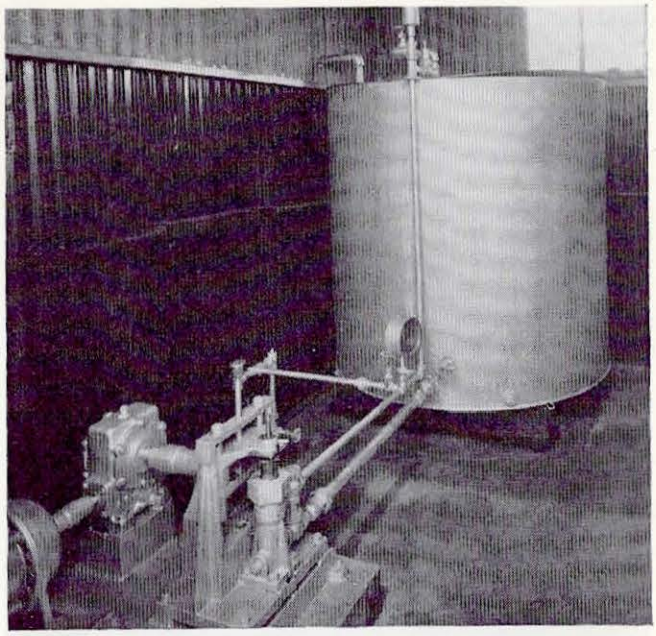
However, the primary element in the plan under which water treatment is conducted on the C. & E. I. is the close supervision maintained by the contractor. While the new system was being introduced this company had two or more members of its technical staff in constant attendance, this force being reduced eventually to a single resident inspector, whose supervision of the treatment is checked by officers of the chemical company. This is carried out through the agency of a system of weekly reports and periodic visits by traveling representatives of the company.

The primary check on the effectiveness of the treatment is obtained through hardness and alkalinity tests made each week of some 120 water samples, of which at least 60 are taken from locomotive boilers at the engine terminals, while the remainder are mainly treated water sent in by the water station attendants. Weekly tests of raw waters are confined to those from surface supplies that are subject to appreciable variation in the content of dissolved solids, all the others being tested at less frequent intervals. The samples are sent to the headquarters of the inspector at Danville, Ill., who spends two days each week in making the tests and preparing reports. During the remainder of the week he is constantly on the road, checking the accuracy with which the treatment instructions are followed by the railway company's employees, inspecting the proportioning equipment, and investigating any complaints of trouble in locomotive performance that have been ascribed to the water. In connection with this phase of his work, he spends a considerable part of his time riding locomotives to study boiler performance.

Watching the Treatment

In the main, the treatment inspector is concerned with the problem of obtaining results in treatment, as determined by the tests of water samples, that fall within the specified limits of tolerance. The requisite proportions of the chemicals to be introduced into the water at each station are recorded on a simple instruction card posted in the pump house, and whenever tests of the treated water indicate the need for a change in treatment, this card is replaced by a new one that provides for a readjustment in the proportions.

Such changes in treatment are made by the inspector on his own initiative as are any investigations that he finds necessary in running down inferior results. However, his weekly reports on the tests of water samples, copies of which are sent both to the office of the National Aluminate Company and to the superintendent of motive power of the railroad, afford opportunity for a scrutiny of the results he is obtaining and any deviations from the desired results are investigated.



Interior of Chemical House at Yard Center, Ill., Showing Chemical Proportioner and Chemical Vat

The improved quality of waters delivered to locomotives on the C. & E. I. has resulted in marked betterment in boiler performance and a sharp decline in boiler and fire-box maintenance. In addition to the benefits derived from an almost complete absence of scale, the maintenance of excess alkalinity in the treated water is said to have virtually eliminated pitting, and experience has shown that satisfactory performance can be obtained with an appreciably higher concentration of soluble salts in the water carried in the boilers than was formerly possible. In some cases this has run as high as 160 grains per gallon without any noticeable carry-over into the cylinders.

The effect on boiler and fire-box maintenance is indi-

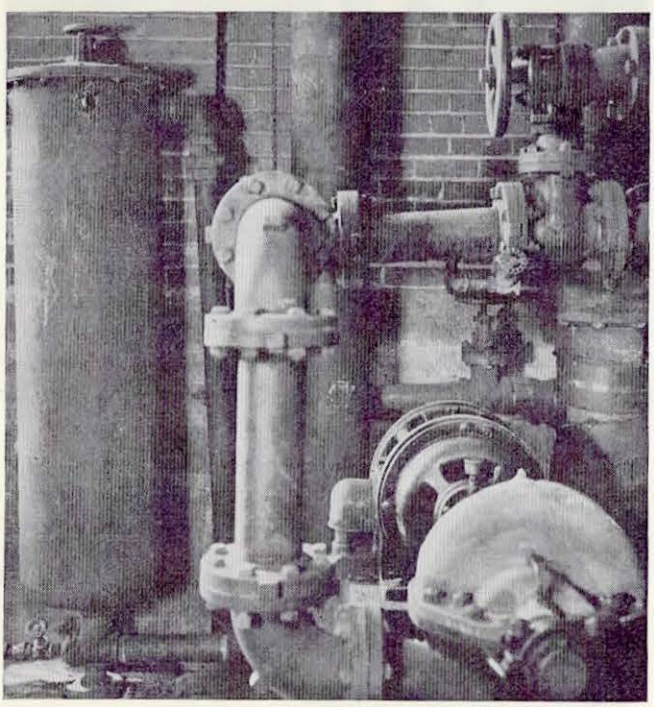
Table III—Savings in Boiler Maintenance and Boiler Washing in 1933 Compared with 1930

(Equated to the same locomotive mileage)

	1930	1933	
Boiler Maintenance—Labor			
Locomotive Miles Run	7,078,859	5,194,094	
Total boilermakers' time (man-hours)	178,902	62,282	
Boilermakers' time per 1,000 locomotive miles (man-hours)	25.27	11.99	
Saving in man-hours per 1,000 locomotive miles		13.28	
Value of labor saved per 1,000 locomotive miles 13.28 at $.75			$9.96
Boiler Maintenance—Material			
Cost of material issued	$24,470	$2,516	
Cost per 1,000 locomotive miles	3.45	.48	
Saving in material per 1,000 locomotive miles			$2.97
Boiler Washing			
Cost of boiler washing	$23,887	$3,153	
Cost per 1,000 locomotive miles	3.37	.61	
Saving in boiler washing per 1,000 locomotive miles			$2.76
Total savings per 1,000 locomotive miles			$15.69
Total saving on 5,194,094 locomotive miles run in 1933		$81,495	
Cost of treatment in 1933		38,577	
Net saving obtained as a result of decreased expenditures for both washing and maintenance		$42,918	

cated in Table I, which shows boilermakers' time and the value of fire-box steel and staybolt iron issued, in relation to locomotive miles. Table II shows corresponding figures for boiler washing, while Table III gives an analysis, prepared by officers of the C. & E. I., of the savings effected by the reduction in boiler maintenance and boiler washing, equated to the locomotive miles run in 1933. This shows a saving of $81,495 in these two items during 1933. Deducting from this, the cost of water treatment during that year, amounting to $38,577, leaves a net saving of $42,918, and as all equipment employed in treatment is owned by the contractor there are no deductions to be made for fixed charges on investment.

However, the economies effected are not confined to the savings due to reductions in expenditures for labor and material consumed in boiler maintenance and washing. For example, in 1930 boilers were washed on an



Interior View of Pump House at Wansford (Evansville), Ind., Showing Installation of Ball Feeder (at Left)

average of 1.704 times per 1,000 locomotive miles, whereas, in 1933 the corresponding figure was 0.322, thus indicating a saving of 1.38 washes per 1,000 locomotive miles run, or a total of 7,180 washouts for the 5,194,094 locomotive miles run in 1933.

On the basis of a detention of one day per washout, this figure indicates an added availability of 7,180 locomotive days, or an average of 20 locomotives per day. While this figure cannot be translated into savings in fixed charges on the investment in power during a period of surplus power, it does indicate a considerable reduction in the out-of-pocket cost of reconditioning an equal number of stored locomotives for use.

There are of course, other sources of economy that cannot be definitely evaluated. For example, in 1930 there were 26 engine failures chargeable to boiler or fire-box defects, in 1931 there were 14, in 1932 there were 2, while in 1933 there was only one, namely, a crack under the door sheet which was ascribed to incomplete washing and not to any condition for which the quality of the water could be held accountable. Other intangibles include the saving in water and fuel arising from the greater intervals between boiler washouts and from the decreased volume of water lost in blowoffs by reason of the ability to carry higher concentrations of dissolved matter. The officers of the C. & E. I. are satisfied that the total savings greatly exceed those indicated by the economies realized in boiler maintenance and boiler washing alone.

Rate Hearing at Denver

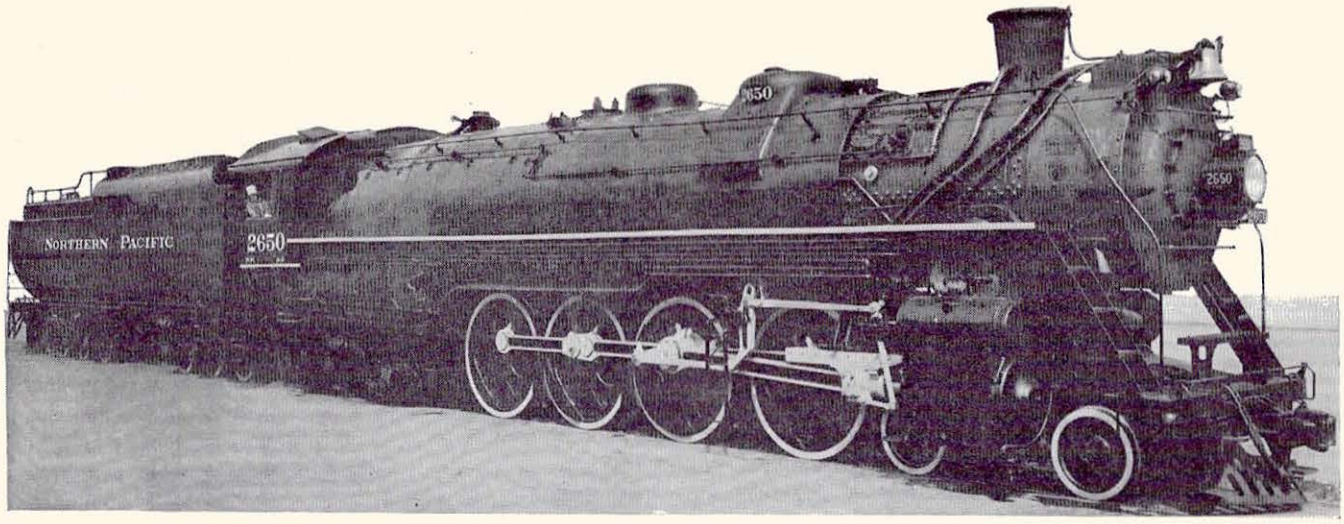
THE hearing on Ex Parte 115, the carriers' application for increased freight rates, held by the Interstate Commerce Commission at Denver, Colo., on October 26, occupied one day instead of two days as originally expected. Commissioner Clyde B. Aitchison presided, and with him was J. D. Lamb, chairman of the New Mexico Corporation Commission, who was named to represent the commissions of 11 mountain and Pacific states. While the carriers' testimony was presented at Washington and the Denver hearing was intended to give shippers an opportunity to testify, L. T. Wilcox, assistant freight traffic manager of the Union Pacific at Omaha, Neb., was placed on the stand to amplify the carriers' testimony given at Washington.

J. B. Wilson, secretary of the Wyoming Woolgrowers Association, testified for that industry, saying that wool growers have been in dire straits for the last four years and if the rate increase is granted, the government will become one of the largest livestock holders in the world because many of the herds of sheep and cattle in Wyoming and other western states are encumbered with loans from the government and if an additional burden is placed on livestock, the owners will be unable to carry their debts and will lose their property.

C. H. McWhinnie, chairman of the Board of Equalization and Public Service Commission of Wyoming, testified that railroads in Wyoming had advanced their rates 12 per cent and are now earning 8 per cent on their state investment, a higher rate of return than that earned by many other types of business. He contended that the increase was unjustifiable.

G. M. Drummond, general superintendent of the Holly Sugar Corporation, opposed an increase in the rates on sugar beets. He said the increase would be absorbed by growers and this would retard the development of beet-growing areas located more than 50 miles from sugar beet factories. Joseph H. Tedrow, transportation commissioner of the Kansas City Chamber of Commerce, asked that Kansas City rates be placed on a parity with those of other cities so as not to destroy the Kansas City market.

J. B. Wellborne, traffic manager of the Kuner-Empson Company, Colorado canners and pickle manufacturers, testified that traffic will be lost to trucks if rates are increased. He said that up to 1931, 100 per cent of this company's products moved by rail, while in the last few years, the proportion has decreased until at present only 65 per cent of its products move by rail and the remaining 35 per cent by truck. In some territories, he said, 84 per cent of the company's business moves by truck. The increasing use of trucks by industries was also shown by L. E. Waters of the Colorado Potato Growers Exchange, who said that during the 1932 season, 49,446,597 lb. of potatoes moved from Colorado by truck, while during the 1933 season the amount had increased to 60,298,216 lb. Others testifying were Thomas Wood, chief of rates in transportation of the Arkansas Corporation Commission; and W. G. Lyons, traffic manager for the Pueblo Chamber of Commerce.



Northern Pacific 4-8-4 Type Locomotive for Heavy Passenger Service

Northern Pacific Receives Heavy Passenger Power

Baldwin-built locomotives of 4-8-4 type develop 69,800 lb. tractive force—Driving journals equipped with Timken roller bearings

THE Northern Pacific is receiving delivery of 10 locomotives of the 4-8-4 type, the first of which left the Eddystone plant of the Baldwin Locomotive Works on Stepember 10. Before proceeding to the home lines, however, this locomotive was placed on exhibition at the Wings of a Century Pageant, at the Century of Progress Exposition, Chicago, from September 15 to October 5.

These locomotives were designed for use in heavy through passenger service and on silk specials between Jamestown, N. D., and Missoula, Mont., a distance of 906 miles. This line includes sections with rolling grades, water-level grades and heavy mountain grades. The locomotives are among the heaviest in weight and tractive force and have the largest drivers of any locomotives of this type yet built. With driving wheels 77 in. in diameter; cylinder, 28 in. by 31 in. and a boiler pressure of 260 lb., these locomotives develop a maximum rated tractive force, with 70 per cent cut-off, of 69,800 lb. The weight on drivers is 279,800 lb. and the total weight, 489,400 lb., which compares with the Chicago & North Western locomotives of this type built in 1929 with 288,000 lb. on drivers and 498,000 lb. total engine weight; 76-in. drivers; 27-in. by 32-in. cylinders, and 250-lb. boiler pressure. The latter locomotives, however, develop a lower tractive force—65,200 lb., which, with the use of a booster, is increased to 76,500 lb. The Northern Pacific locomotives have a combined heating surface of 7,138 sq. ft., which compares with 7,571 sq. ft. for the C. & N. W. locomotive.

One of the outstanding variations from customary proportions in the Northern Pacific locomotive is the unusually large firebox with a grate area of 115 sq. ft. This is explained by the character of the coal these locomotives have been designed to burn. This is the Rosebud lignite coal from the strip mine near Forsythe, Mont. This fuel has a heating value of about 10,800 B.t.u. per pound; a moisture content of 11 per cent; 51 per cent volatile and 30 per cent fixed carbon. It is not high in sulphur and the ash runs under 8 per cent. Another feature of particular interest is the inclusion of Timken roller bearings on all driving-axle journals.

The boiler and firebox are constructed from plates of Lukens basic carbon steel and the boiler barrel has a diameter of 88 in. outside the first ring. The firebox is 162 in. long by 102¼ in. wide, which provides a grate area of 115 sq. ft. and a ratio to heating surface of 1 to 43.16. The combustion chamber is 90 in. long, thus bringing the length of the tubes and flues down to 19 ft. 6 in.

Welding is used extensively to seal the firebox seams. The back tube sheet is welded, both inside and outside, after calking. The firebox door sheet is welded to the crown and sides, which are formed from a single sheet. The outside throat sheet is also sealed with electric welding after calking. Flannery Telltale staybolts, with welded caps, are used for the full length of the combustion chamber, for the first three rows of roof stays back of the seam and in the breaking zone.

The brick arch is supported on five 4-in. tubes. The boilers are fitted with Elesco Type E superheaters. Five of them are equipped with Worthington feedwater heaters and five with Wilson water conditioners. Coal is fed by a modified Type B Dupont-Simplex stoker with

a capacity of 25,000 lb. of coal per hour. The front end is fitted with a Cyclone spark arrester.

Separate turrets are provided for superheated and saturated steam. The superheated-steam turret in the smokebox provides for the blower, air pumps, whistle, headlight turbo-generator and the stoker. The saturated steam turret in the cab provides steam for the

Table of Dimensions, Weights and Proportions of the Northern Pacific 4-8-4 Type Locomotives

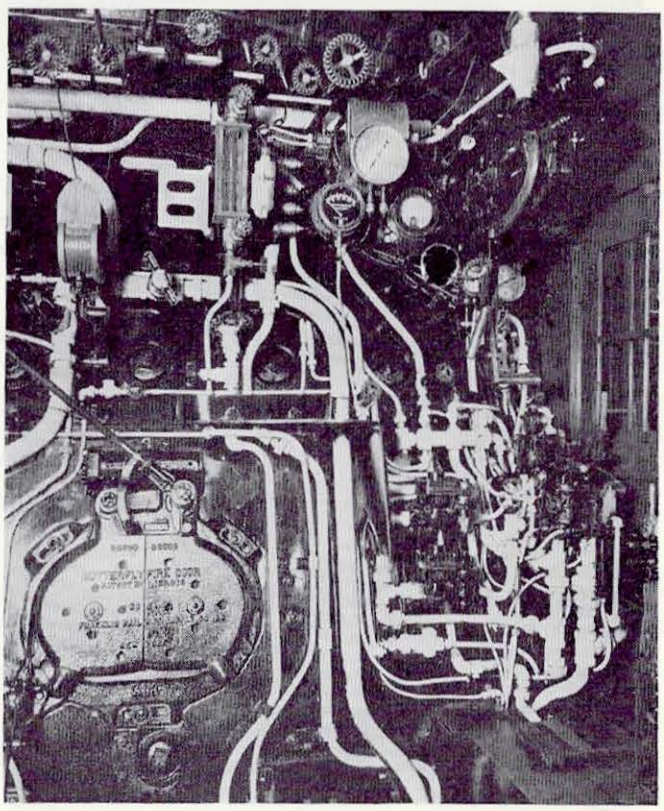
Railroad	Northern Pacific
Builder	Baldwin Locomotive Works
Road class	A-2
Type of locomotive	4-8-4
Service	Passenger
Cylinders, diameter and stroke	28 in. by 31 in.
Valve gear, type	Walschaert
Valves, piston type, size	14 in.
Maximum travel	7½ in.
Crank throw	19½ in.
Outside lap	1 15/16 in.
Exhaust clearance	⅜ in.
Lead, constant	¼ in.
Cut-off in full gear, per cent	70
Weights in working order:	
On drivers	279,800 lb.
On front truck	96,600 lb.
On trailing truck	113,000 lb.
Total engine	489,400 lb.
Tender	387,600 lb.
Wheel bases:	
Driving	20 ft. 8 in.
Rigid	13 ft. 4 in.
Total engine	48 ft. 5 in.
Total engine and tender	95 ft. 3 in.
Wheels, diameter outside tires:	
Driving	77 in.
Front truck	36 in.
Trailing truck	37 in. and 45¾ in.
Journals, diameter and length:	
Driving, main	13½ in.
Driving, others	12½ in.
Front truck	7½ in.
Trailing truck	7 in. and 8 in.
Boiler:	
Type	Conical
Steam pressure	260 lb.
Fuel, kind	Posebud coal
Diameter, first ring, outside	88 in.
Firebox, length and width	162 in. by 102¼ in.
Height mud ring to crown sheet, back	79⅝ in.
Height mud ring to crown sheet, front	87¼ in.
Arch tubes, number and diameter	5—4 in.
Combustion chamber length	90½ in.
Tubes, number and diameter	50—2¼ in.
Flues, number and diameter	217—3½ in.
Length over tube sheets	19 ft. 6 in.
Grate area	115 sq. ft.
Heating surfaces:	
Firebox and comb. chamber	480.2 sq. ft.
Arch tubes	62.6 sq. ft.
Firebox, total	542.8 sq. ft.
Tubes and flues	4,421.5 sq. ft.
Total evaporative	4,964.3 sq. ft.
Superheating	2,174.0 sq. ft.
Comb. evap. and superheat	7,138.3 sq. ft.
Special Equipment:	
Brick arch	Yes
Superheat	Elesco Type E
Feedwater heater (5)	Worthington 6-S-A
Feedwater conditioner (5)	Wilson
Stoker	Duplex Simplex Type B modified
Tender:	
Style	Rectangular W.B.
Water capacity	20,000 gal.
Fuel capacity	27 tons
Rated tractive force (70 per cent cut-off)	69,800 lb.

injector, the feedwater heater, the power reverse gear, lubricator heaters, drifting valves, steam heat in the cab and train and the coal pusher. The boiler has no auxiliary dome; the safety valves are screwed directly into the third boiler course back of the main dome. The whistle is mounted alongside the smokebox. The boilers are fitted with Wilson sludge-removers and air-operated blow-off cocks.

The locomotive is built on the General Steel Castings Corporation bed, with which are cast the cylinders, including the back heads, the air reservoirs and the inside cradle. A unique feature of the cylinders is the extension of the saddle flange high up on each side of the smoke arch, and the inclusion of the outside steam pipe connection as a part of the saddle. The lower ends of the branch pipes are directly connected to the saddle passages to the steam chests in pockets in the casting which open directly into the smokebox. Thus, the troublesome gland-packed openings through the smokebox are entirely dispensed with.

The 70-in. driving-wheel centers are of the General Steel Castings Corporation Boxpok design, which are cast of Vanadium steel by the Standard Steel Works Company. The advantage of the disk design in a wheel center of such large diameter lies in securing a better casting than with the conventional spoke design. The main wheels of the locomotive are cross-counterbalanced according to the A.R.A. method.

All driving axles are fitted with Timken roller bear-



The Right Side of the Cab

ings. These are provided with safety bombs—chemical cartridges inserted in the bearing housings. These warn against overheating by giving off visible fumes before temperatures have reached a dangerous point. The Alco lateral device is applied to the front driving box, giving a lateral of 1 in. on each side between the boxes and pedestals. This reduces the rigid wheel base to 13 ft. 4 in. The other driving boxes are all fitted with ⅜-in. total lateral play.

The connecting rods are of annealed, open-hearth steel with solid ends. The front end of the main rod is fitted with a solid brass bushing pressed in. The back end of the main rod and the side rods are all fitted with fixed bushings of Hunt Spiller iron, pressed in, and with floating bushings of brass.

The engine truck is of the four-wheel, center-bearing, General Steel Castings constant-resistance type, with a one-piece cast-steel frame. The wheels are rolled steel, 36 in. in diameter, and are mounted on axles with Timken roller bearings in inside journal boxes. The trailer truck is the four-wheel Delta constant-resistance

type with a one-piece cast-steel frame. The front axle is fitted with American Steel Foundries roller-bearing unit with Timken centering device on the box and 37-in. rolled-steel wheels. The rear axle has Timken roller bearings in outside boxes and 45¾-in. steel tired wheels. All axles and crank pins are of open-hearth carbon steel, normalized and tempered. The locomotive axles are hollow bored, as are also the main crank pins.

The 14-in. piston valves are driven by a Walschaert valve gear with a maximum travel of 7½ in. and designed for a limited maximum cut-off of 70 per cent, controlled by an Alco power reverse gear. The locomotive is also equipped with an Alco power-operated throttle lever with provision for auxiliary manual operation, and with the American multiple type throttle.

The tender has a General Steel Castings water-bottom underframe with a modified Vanderbilt type tank of welded construction. The water capacity is 20,000 gallons and fuel space is provided for 27 tons. The tender is carried on two General Steel Castings six-wheel trucks. The truck wheels are 37 in. in diameter and the axles are fitted with American Steel Foundries roller-bearing units. The tenders are equipped with track sprinklers.

The locomotives are equipped with the No. 6 ET brake applied to all driving, truck and tender wheels. Two 8½-in. cross-compound compressors are mounted on the left side of the boiler. Five of the locomotives have Pyle-National, and five Sunbeam turbo generators. Other accessories include the Franklin Butterfly fire door, Barco low-water alarm and a Hancock non-lifting inspirator of 10,000 gallons capacity.

Principal data and dimensions are given in the table.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended October 20 totaled 640,280 cars, an increase of 4,641 cars as compared with the week before but a reduction of 16,725 cars as compared with the corresponding week of last year and of 1,705 cars as compared with 1932. Miscellaneous freight, grain and grain products, and live stock showed increases as compared with the corresponding week of last year, while all commodity classifications except miscellaneous, ore and live stock showed increases as compared with the previous week. The summary, as compiled by the Association of American Railroads, follows:

Revenue Freight Car Loading

Week Ended Saturday, October 20, 1934

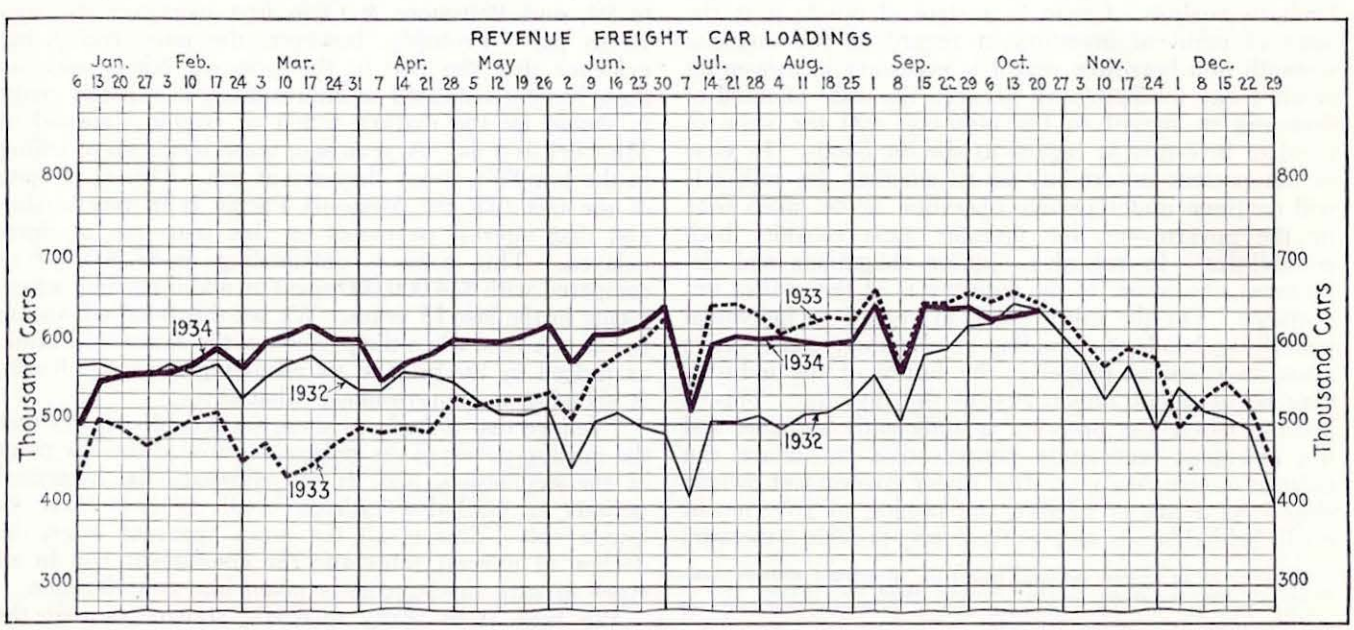
Districts	1934	1933	1932
Eastern	137,787	139,131	139,522
Allegheny	115,986	123,694	112,911
Pocahontas	43,845	45,936	47,594
Southern	88,824	88,719	92,123
Northwestern	90,308	92,225	76,355
Central Western	109,069	112,779	112,438
Southwestern	54,461	54,521	61,042
Total Western Districts	253,838	259,525	249,835
Total All Roads	640,280	657,005	641,985
Commodities			
Grain and Grain Products	31,268	28,590	33,046
Live Stock	27,355	23,716	23,726
Coal	124,977	130,103	140,743
Coke	5,918	6,520	4,831
Forest Products	23,347	24,510	18,572
Ore	16,685	28,600	6,326
Merchandise L.C.L.	163,973	173,531	178,423
Miscellaneous	246,757	241,435	236,318
October 20	640,280	657,005	641,985
October 13	635,639	670,680	649,690
October 6	631,318	662,373	625,089
September 29	644,647	669,186	621,658
September 22	643,120	659,866	595,604
Cumulative Total, 42 Weeks	25,216,036	23,604,738	22,889,456

The freight car surplus for the last half of September averaged 317,525 cars, a decrease of 12,963 cars as compared with the number in the first half of the month. The total included 195,360 box cars, 94,250 coal cars, 6,882 stock cars and 9,213 refrigerator cars.

Car Loading in Canada

Car loadings in Canada for the week ended October 20 totaled 56,873, as compared with 51,705 cars last year and 49,875 cars in 1932, according to the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
October 20, 1934	56,873	19,663
October 13, 1934	51,560	18,790
October 6, 1934	53,050	18,832
October 21, 1933	51,705	18,844
Cumulative Totals for Canada:		
October 20, 1934	643,767	41,818
October 21, 1933	598,432	32,961
October 22, 1932	674,360	46,325



SCALING DOWN INTEREST NO

By Fairman R. Dick,†

Dick & Merle-Smith, New York

THERE can be no denial of the fact that the railroads as a whole are in a state of financial collapse, alleviated by loans of government money. Failing a restoration of earnings and credit, this assistance must become more or less permanent, and that means some form of government ownership. There is no dissension as to the necessity of restoring credit. Mr. Eastman well points out in his first report that a continuous inflow of capital funds is essential to a healthy railroad system, even assuming a lack of traffic growth.

In discussing earnings I confine myself to the net operating income of the carriers and disregard their other income, which comes from outside investments and other sources. In 1932 the railroads earned 326 million and in 1933, 474 million. Traffic, meanwhile, has remained approximately the same. The estimate for 1934 is about 400 million but this does not reflect the true earning power of the roads under present conditions as the 10 per cent wage increase does not go into full effect until April of next year. The total increase in expenses due to this and to rising costs of materials is approximately $293,000,000. For the purposes of this discussion, I use the indicated earning power of the roads at the present level of traffic rather than the actual estimate for this year. In view of the failure of traffic to increase and the certainty of these increased expenses, I feel it is accurate to estimate the earning power of the railroads, under present conditions, at not over 300 million, which is about what they earned in 1932.

Junior Obligations the True Gage of Credit

The situation in regard to railroad credit is more difficult to analyze. Credit is a state of mind; it is the state of mind of investors in regard to the financial strength of a borrower, and it is necessary in measuring credit today to distinguish between the state of mind of investors in regard to the industry, and the state of mind of investors in regard to specific bonds. In view of the present uncertainty as to whether the railroads will continue under private operation or be taken over by the government, the investor must consider both possibilities. In regard to junior obligations and debentures, the future of the industry is of the utmost importance. On the other hand, in regard to individual underlying bonds, outstanding at extremely conservative rates on essential property, the future of the industry may be of minor importance to the investor. This is because where the property is sufficiently valuable and the mortgage sufficiently conservative, no doubt can exist as to complete protection under government ownership. As a matter of fact, the placing of government credit behind bonds such as these may provide a measure of safety superior to any thought possible in a normal restoration of credit under private ownership.

It is for these reasons that in measuring the credit of the industry I take as a yard-stick the junior bonds and obligations and eliminate underlying issues of unquestioned security. Measuring the credit of the industry today, we find that, with extremely few exceptions, the railroads are unable to borrow money on their notes, or even on junior mortgage bonds, although in the last year the sale by the Pennsylvania of general mortgage bonds is an indication of a turn for the better. However, if we look further into the picture we see only a few roads that have shared the improved credit of the Pennsylvania. Baltimore & Ohio refunding bonds are up slightly, although the road's convertible unsecured bonds are unchanged. New York Central refunding bonds are unchanged, while Southern Pacific debentures and Erie refundings are slightly better. In regard to the junior bonds of some of the western lines, such as the St. Paul and the Chicago & North Western, prices are substantially lower.

If we measure credit by the financial strength of the borrower as reflected by the prices of railroad stocks, we see that the situation is materially worse. Most railroad stocks are selling from 10 to 30 per cent lower than a year ago. This decline in railroad stock, however, may have been due to other factors.

Government Ownership No Bugbear to Underlying Issues

During the last year, however, when railroad credit has been improving but slightly, if at all, there has been a decided increase in the price of selected bonds of the type where there could be no doubt of their protection under government ownership. I refer to bonds like Nickel Plate 4s which are outstanding at approximately 50 per cent of the amount spent for improving the property in the last ten years. These have advanced from 82 to par. Big Four generals have advanced from 77 to 94, and Baltimore & Ohio first mortgage 4s from 90 to par. Probably, however, the most convincing evidence that the rise in the price of bonds such as these has not indicated an improvement in railroad credit is shown by the market action of Pacific Railroad of Missouri first 4s. A year ago, these bonds were selling in the low 80's, today they are at par. This is in spite of the fact that the Missouri Pacific is in receivership and that interest payments on this issue are at times delayed. This bond is outstanding at $7,000,000 as compared with $14,000,000 spent on additions and betterments in the last 15 years. We see this bond advancing to par at a time when the position of the Missouri Pacific, as judged by the price of its refunding mortgage bonds, is showing no improvement whatsoever.

I believe that a study of these facts demonstrates that the earning power of the railroads is now at the low point of the depression, and, if we eliminate the hysterical periods in 1932 that railroad credit is at or near its lowest ebb. This is all the more apparent when the decline in interest rates and the consequent rise in all types of safe investments is taken into consideration.

We hear from many quarters, statements that the

* Abstract of an address delivered before the Investment Bankers Association of America, White Sulphur Springs, West Va., October 27.

† Mr. Dick has just been appointed advisor on finance and credit to the Association of American Railroads.

SOLUTION OF RAILWAY ILLS*

Suggestion That Reorganizations Like Those of 'Nineties Would Aid Credit Overlook Fact That Net After Taxes Is Only 10 Per Cent of Gross Today Whereas It Was 28 Per Cent In 'Nineties — Increased Gross Through Higher Rates and Regulation of Competitors the Only Solution

trouble with the railroads today is their unbearable burden of debt, and that the proper way to restore credit is to relieve the roads of this unbearable burden of debt by a general scaling of charges. Proponents of this policy point to the restoration of credit that took place in the 'Nineties following drastic reorganizations, and they now recommend a similar course. The subject is of vital importance since, if it is not true that a drastic scaling of charges will restore credit today, the shock to the financial community of such a procedure might be so severe as to render hopeless any restoration of credit whatsoever.

The Present and the 'Nineties Compared

It seems to me that the easiest method of demonstrating both the right and the wrong methods of restoring railway credit is to compare the present situation with that existing in the '90's. The facts as to the radical differences between these two periods are obvious and simple. In 1894 the roads had, roughly, gross revenues of $1,000,000,000, of which they saved $300,000,000 for net, whereas in this depression, with a gross of $3,000,000,000, the net was approximately the same as in 1894. In other words, in relation to gross the net today is one-third of what it was in the '90's. You will also note that the $300,000,000 of net in the '90's compared with $37,000,000 in taxes, which today amount to $275,000,000. You will note, also, that this $300,000,000 net compared with $446,000,000 in payments to labor, which today amount to $1,500,000,000.

Everybody has been familiar in a general way, of course, with this large increase in expenses and taxes, but I have not found many people who realized that the burden of interest charges today, in relation to gross revenues, is far below what it was in the '90's. In the former period charges consumed approximately 34 per cent of the gross, and today, 22 per cent. A reduction of all these factors to their simplest form may be made by stating that the net in the '90's was 28 per cent of the gross earnings, which was a safe margin. The net today is 10 per cent of the gross earnings, which is an *unsafe* margin. With a sufficient margin, credit can be restored by a reduction of charges; with an insufficient margin, no reduction of charges can restore credit.

It may make the situation somewhat clearer if I take the gross of our railroads today and readjust the taxes, expenses, interest and net in accordance with the proportions prevailing in the '90's. The following is the result. I reduce my taxes from $275,000,000 to $106,000,000, and likewise reduce my compensation to labor by $200,000,000. By these savings, together with some savings in other expenses, I increase my net to $888,000,000. Therefore, a net today of $888,000,000 would be comparable with a net of $300,000,000 actually earned in the '90's. Similarly, the interest charges today of $690,000,000 should be increased to over $1,000,000,000 to agree with the proportion prevailing in the '90's. If today the railroads had $888,000,000 net, taxes of $106,000,000 and interest charges of $1,000,000,00, credit could be restored by scaling down interest charges, but with actual earnings of $300,000,000, taxes of $275,000,000 and interest charges of $700,000,000, such a procedure cannot be followed with success.

If an attempt were made to restore credit today by a general scaling down of interest charges, the success or failure of such a procedure would depend on the state of mind of investors. Such a scaling today so that interest charges would conform with the net earnings of forty years ago would mean a scaling that would disregard all return on the large increases in traffic, in investment and in efficiency that have taken place since that time. During this period property investment has increased from $9,000,000,000 to $25,000,000,000, revenue ton-miles have increased from 80,000,000,000 to 233,000,000,000 and efficiency, as measured by tons per train, has risen from 180 to 596.

Scaling Down Interest Charges Ineffective as Remedy Where Profit Margin Is Low

There is no doubt in my mind that in view of these facts a general scaling of charges today would have a most disastrous effect on the minds of investors—that is, *credit*; even if charges were in fact scaled today the margin of net is so unsafe that investors could feel little confidence as to the future.

If in 1932 we had reduced our gross 10 per cent and made no reduction in taxes or expenses, net would have been completely eliminated. If, in 1894 gross had been reduced 10 per cent and there had likewise been no reduction in expenses, the net would have been reduced only one-third.

The situation can be further emphasized by examining a road, the credit of which was restored by reorganization in the '90's. For this illustration I have chosen the Northern Pacific. In 1893 the Northern Pacific had a gross of $24,000,000 and a net of $9,000,000. In 1932

the Northern Pacific had a gross of $47,000,000 and a net of less than $2,000,000. The margin of profit in 1894 was 37 per cent, which was safe. The margin of profit in 1932 was only 4 per cent, which was unsafe.

Taxes in 1893 were $462,000, compared with taxes of $6,600,000 in 1932. Interest charges in 1893 consumed 50 per cent of the gross, and in 1932 consumed 30 per cent of the gross. This latter figure is reduced to 17 per cent if we exclude the bonds issued to buy Burlington stock. It takes but a cursory inspection of these facts to see how easy it was to restore the credit of the Northern Pacific in 1893 by a scaling of charges and how today, if we assume a continuance of a net of $2,000,000 the problem is insoluble by a scaling of charges, assuming other factors unchanged.

It might be pointed out that on certain roads today there is an adequate margin of profit, and that cases can be found where credit can be restored by scaling charges. On the other hand, with an average margin of profit for the country of 10 per cent there are many essential roads with a distinctly less favorable margin.

Let us take the St. Paul and the Chicago & North Western, with a combined property investment of $1,300,000,000. If we look back to 1894 we see that the present charges on their underlying bonds was earned at the time with a substantial margin. The margin of profit was 35 per cent. Today, with two or three times the traffic and investment, earning power is insufficient even to pay this underlying interest, and the margin of profit has been reduced almost to extinction.

Take the Alton. In 1894 the present fixed charges were earned with a substantial margin. The gross has more than doubled since that date and today these charges are only earned 25 per cent. The margin of profit has declined from 42 per cent to a bare 3 per cent.

Let us take two roads where the margin of profit has been completely extinguished, the "Monon" and the Mobile & Ohio. Both of these roads earned their present underlying interest in the depression of the '90's. With increases in traffic and in plant of from 200 to 300 per cent, today they are unable to earn their taxes. The "Monon" has a property investment of over $50,000,000, its first mortgage is outstanding at $15,000,000 and is selling at 25. To restore the credit of this road by a scaling of charges a witch-doctor is required, not a financial expert.

Profit Not Determined by Operating Efficiency

This variation in the margin of profit is not merely a matter of efficient operation; it depends on many other things, of which the most important, in my opinion, is the rate structure and divisions in the particular territory. It has been definitely proven that the low margin of profit of some of our most important roads in certain sections of the country cannot be traced, in the slightest degree, to a lack of efficiency in operation.

To restore credit it is plainly necessary for the railroads to attain again a safe margin of profit and, without a safe margin of profit, credit for the industry cannot be restored. There are three ways by which this margin can be increased. The first is increased traffic. Unfortunately, however, no means have yet been discovered for automatically increasing traffic and if we accept the present volume of traffic as likely to continue for some time we must turn, as a means of increasing the margin of profit, either to decreasing expenses or increasing rates. Developments along these lines during the past year have not been favorable. The railroads obviously cannot purchase less materials and supplies than at present—even under any conceivable system of co-ordination or consolidation—and unfortunately the cost of these supplies has advanced materially in the past year. Under present conditions reducing taxes cannot even be discussed. Therefore it is seen that the only feasible means for decreasing expenses today lies in decreasing payments to labor. Savings here can be made either by reducing wages or discharging men. Discharging men through co-ordination is now prohibited by the Emergency Transportation Act of 1933. Mr. Eastman has recommended that this provision be repealed.

Likewise, in regard to reducing wages the situation is unfavorable. An agreement was made during the year by the carriers to increase wages $150,000,000. It would seem, therefore, that the only practicable way of increasing the margin of profit is by increasing rates. An application for an increase totaling $170,000,000 is now before the Commission. The traffic experts believe that this increase can be made effective in spite of competing agencies. The situation requires a greater increase, but such was not found to be practicable.

Necessity for Truck and Waterway Regulation

This increase can be made larger however, if the bill to regulate trucks and waterways is passed in the next Congress. Mr. Eastman has already drawn the bill, and if it becomes law, it should prove possible to pass on to the shipping public whatever burden seems necessary in order to restore a safe margin of profit.

This question of increasing the margin of profit by increasing rates is a problem of the greatest complexity. Mr. Eastman in the Co-ordinator's report points out that the present structure is based on principles which cannot with advantage be applied in the face of competition by other transportation agencies. If the bill to regulate the trucks and waterways passes and the whole problem is placed in the hands of the Commission it is hoped that the railroads acting as a unit through their new association can, together with the experts in the Commission, devise a scientific rate structure which will provide an adequate and safe margin of profit.

In my opinion the Co-ordinator's report is the ablest analysis of the railroad industry that has ever been made; it is extremely conservative in its viewpoint. Mr. Eastman dismisses the bugaboo of over-capitalization by showing that by every yardstick which the Commission has found practicable, railroad capitalization is well below value. He further points out the necessity of restoring earnings to a higher figure than has been thought necessary in the past, and he points out that investors invest in railroad securities only if the situation is to their liking. He further points out that the situation must be made attractive even to railroad stockholders, as without the sale of stock bond issues cannot be kept safe and attractive to investors.

A. A. R. a Hopeful Augury

You, of course, are familiar with the weaknesses in the railroad industry that have arisen due to its competitive nature, and the difficulties that the railroads have had in co-ordinating their policies for the benefit to the industry as a whole. Mr. Eastman points out that such co-ordination must be brought about if the earning power of the industry is to be restored. It is a recognition by the railroads of the necessity for progress along these lines that has brought about the formation of the Association of American Railroads. In this organization we now have, for the first time, adequate machinery for the organized leadership of the industry. I am hopeful that this association, working along the principles which I have outlined, and with the co-operation of the Administration, will be able to restore the investors' confidence in railroad securities.

Passenger Traffic Officers Meet

Advertising, solicitation and development of passenger traffic discussed at St. Louis convention

A NATIONAL publicity campaign to be conducted jointly by the railways and to employ magazines, newspapers, the radio, moving pictures, posters, leaflets and lectures, was recommended at the seventy-sixth annual meeting of the American Association of Passenger Traffic Officers at St. Louis, Mo., on October 25-26. This recommendation was made by the Committee on National Publicity, of which D. M. Bowman, passenger traffic manager of the New York Central Lines, was chairman, as an essential agency to increase railroad travel in competition with the efforts of other transportation agencies and elaborate merchandising programs of other industries.

In addition to advertising, the meeting discussed faster schedules to meet the public demand for speed, streamlined equipment, air conditioning, passenger fares and solicitation and their importance in developing railroad travel. The principal speakers were L. W. Baldwin, president of the Missouri Pacific, and H. G. Taylor, chairman of the Western Association of Railway Executives.

Election of Officers

Officers elected for the ensuing year were: President, A. J. Dickinson, passenger traffic manager of the Great Northern; vice-president, C. C. Howard, passenger traffic manager of the Erie; and secretary, W. C. Hope, re-elected.

Efforts of Railroads Summarized

A. D. Bell, president of the association, and assistant passenger traffic manager of the Missouri Pacific, described the efforts being made by the railways to increase their passenger business, saying in part:

The comment has frequently been made that the railroad transportation machine has not kept pace with the times. It would seem to me that this statement must be born out of malice and nursed by ignorance. At least our critics have failed to look at all of the facts fairly. The passenger service of the American railroads need make no apologies for its performance and it is daily improving in quality. Consider first, the safety of travel by train. No other form of transportation can even approximate the record of the railroads.

The luxuries and comforts of train travel, including the much criticized day coach, have been so greatly developed over the past 20 years that what were once luxuries are now commonplaces, expected and taken for granted. The modern coach in many respects has reached a degree of comfort and luxury of the sleeping cars of a generation or so ago and is a measure of the advancement in service voluntarily given by the railroads under a policy of progressiveness even in the face of declining revenues.

It is true that on branch lines and lighter traveled districts de luxe service is not obtainable. Neither is it in Europe. It is doubtful if patronage would be accorded us were we to operate a de luxe lounge for every passenger on such lines, as due to the advent of the paved highway it looks as though the short-haul traffic has gone to other means of transportation, except possibly for suburban travel. This is true unless something not in our minds at this time, such as congested highways or a cheaper means of operation which will enable the carriers to perform a so-called street railway service, changes the situation.

As passenger traffic officers we must be forward-looking at all times to see to it that our department is a profitable one. There is no reason why we cannot give the public what it wants, be it service by rail or highway, air or water, providing we make up our minds that it is our own special problem and we alone as individuals and officers are capable of arriving at the solution. However, we cannot advocate expansion of service out of proportion to possible income and economy of operation.

National Advertising Advocated

The advertising of passenger service to stimulate travel was discussed by the Committee on National Publicity in its report and in addresses by C. D. Murphy, president of Carroll Dean Murphy, Inc., Chicago; and Robert Thomson, passenger traffic manager of the Chicago & North Western. The report of the committee, as made by Mr. Bowman, in part, reads:

Within the last few months a number of articles have appeared in the daily papers and magazines dealing with railroad advertising and contending that railway advertising pays too much attention to competitive railway service and too little attention to competitive transportation of other kinds. I take exception to this conclusion and feel that the railroads have done an exceptionally good job of advertising. However, conditions have changed and it may be desirable for the railroads to revise their views and plan to meet these changed conditions. Railroad advertising, like many other procedures, has gone through a process of evolution from the early printed placard to the present colorful and artistic display of scenery and facilities.

The criticism that railway advertising misses its mark may be partly justified. It may be that the individual railroads have emphasized their particular advantages, such as shortest route, quickest time, water level route, large fleets of air-conditioned equipment, but this would appear to be quite essential if the real outstanding advantages of any particular route or line are to be presented to the public. I know that the railroads have told their story in an effective way, have spent a lot of money in doing so and, from time to time, have changed their methods to meet changed conditions. However, we have about reached the point where little additional can be said about service or the attractiveness of any particular route or resort.

Possibly we should make our appeal in a different way, more direct to the real source of supply, namely, the younger generation, those of school age and under 25, many of whom have never ridden on a railroad train and, therefore, cannot appreciate the comfort and advantages, have no knowledge of what the railroads mean to the various communities, or the extent to which they are responsible for the development of the country. According to the United States census, there are 29,000,000 children of school age of whom 40 per cent, or about 13,000,000 are in the seventh and eighth grades, high schools and colleges. As this enormous percentage of our total population represents potential travel, some concerted effort should be made to present to them in an attractive manner what railroads mean to United States.

My thought is that the railroads should first make a direct appeal to the school boards and educational authorities in every state and county and in cities of 100,000 or more in an effort to enlist their co-operation; that we could reasonably present this appeal on the grounds of taxes contributed by the railroads towards the support of educational institutions; that we should endeavor to place in every schoolroom, seventh grade and above, a complete railroad map of the United States with statistics showing certain of the features referred to above; that we should augment this with moving pictures showing the operation of trains, attractive scenery and emphasize the comfort of travel by rail, such moving pictures to be accompanied by short lecture; and through this means undertake to dramatize rail service.

A nation-wide publicity campaign should be planned, using newspapers, magazines, posters, leaflets, lectures, moving pictures, radio. In order to secure increased traffic and earnings we should present the matter with an urgent appeal to our executives. I also think we should keep in mind that, while efforts to co-ordinate railroad service, terminals, etc., may be desirable and possibly curtail expense, such action would not have a tendency to increase traffic.

I believe it is the duty of passenger traffic representatives of

the American railways to present to the newly organized Association of American Railroads suggestions as to how we can best accomplish our efforts to bring back traffic to the railroads. I believe it is a fact that passenger traffic men are largely responsible for advertising expenditures and I note that the amount which the railroads charged to advertising in 1928 to 1932 is as follows: 1928, $17,209,153; 1929, $18,714,471; 1930, $16,845,032; 1931, $12,656,441; 1932, $8,860,424, or a total of $74,285,521, and an average of $14,857,104.

I have not been able to determine in my own mind what it would cost to carry out the national publicity plan proposed, but have reason to believe that it should not exceed $1,000,000 per year, and in suggesting this figure I have in mind that the gross earnings for Class I railways was $6,279,520,544 in 1929, $3,095,448,883 in 1933, or an average of over $4,394,000,000 for the last five years, or $3,920,000,000 for the last four years; a $1,000,000 appropriation represents less than one-thirtieth of one per cent of gross earnings. I want to emphasize again—one-thirtieth of one per cent—an insignificant amount when we consider the results that may be accomplished.

At our last meeting in Chicago a resolution was adopted, reading as follows: "The American Association of Passenger Traffic Officers, after very careful consideration, believes the railroads should take concerted action in bringing to the attention of the public the part which carriers have taken in the development and upbuilding of our vast agricultural, manufacturing, industrial and financial strength and, therefore, recommend that the representatives of the individual lines take such means as they may deem expedient to direct the matter to the attention of their executives." I hope that this meeting may find it possible to take action and make definite recommendations to the Association of American Railroads.

Joint Advertising Recommended

Mr. Murphy suggested that the railways analyze their advantages over other forms of transportation and emphasize these points in their advertising copy. In discussing the development of appeals for advertising, he emphasized the customer's point of view and recommended that the railways consider that point of view instead of assuming that railway service is recognized by everyone. He also suggested that the railway personnel with whom the public comes in contact be dramatized in advertising because of its appeal to people and the resulting feeling of intimacy created between the public and the railroad.

Joint advertising was discussed by Mr. Thomson. He described the results of joint advertising of lines in Chicago, saying that in 19 general subjects covered within the last year the cost was 25 per cent of what it would have been if each railroad had pursued its individual course. This practice made it possible to use copy of a larger and more dominating size and thus enable the advertisements to compete for the readers interest in large metropolitan newspapers. He also said that in the future railroads will be further compelled to resort to a union of effort as a matter of self preservation. Continuing, he said:

In the eight years from 1922 to 1929, inclusive, the Class I roads in the country spent over $6,000,000,000 for improvements. Their gross operating revenue was over $48,000,000,000. The total for advertising in that same period was over $108,000,000, of which a considerable part was for folders, other informative matter and salaries. So it might be fair to say that the amount spent for creative purposes was somewhere in the neighborhood of $60,000,000.

On the other hand, see what the highway people were doing to keep every man, woman and child highway-minded. In 1929, the motor car manufacturers, the tire companies and the parts companies spent in that one year approximately $112,000,000 for advertising of all sorts, which was more than all the railroads put together had spent in eight years. In 1929, the wholesale value of motor vehicles, parts and tires was $5,142,315,512. Their advertisement investment was over $112,000,000. In that year the total operating revenue of the Class I railroads was $6,279,520,544 and the advertsing expenditure for folders, salaries and everything else was around $18,000,000.

All of which leads me to suggest that the big question is not whether we advertise jointly or individually but that we advertise in a way and to the extent that will give a fair chance of putting the railroad business back on its feet. Big money is being spent for travel—it remains for us to divert a substantial part of it to our business. The American Automobile Association is authority for the statement that the expenditure for motor travel and expenses incident thereto in 1934 will approximate $3,125,000,000, or $625,000,000 more than in 1933. Compare this with $230,000,000, the total passenger revenue of all the Class I roads for the first eight months of this year and, then after making allowance for many things, see if we don't agree that we should by united efforts be able to turn a larger part of that public expenditure into the railroad treasuries. Don't let us foster the idea that prevails in some places that cutting down the advertising appropriation is saving money. Many times it means the loss of wonderful opportunities for the creation of substantial new revenue.

Development of Passenger Traffic

Another important subject discussed was the development of passenger traffic, particularly basic passenger fares, Pullman fares, fare reductions for special occasions and the handling of privately-owned automobiles in expedited freight service. P. J. Neff, assistant chief traffic officer of the Missouri Pacific, who spoke on basic passenger fares, said that people travel because of one or more impulses, necessity, business, convenience, pleasure and adventure and after they have been moved by one of these appeals, decide on the form of transportation, traveling most of their miles in private automobiles and 10 per cent in other modes. Among the factors which affect their choice of mode, he said, is cost. It is not difficult for the railroads to make the proper appeal to customers but it is hard for them to decide on the fare that will move the business and yet be profitable. Some of the important questions that arise in considering basic fares are: Should a maximum or a minimum fare be fixed? Should a differential exist between coach and Pullman fares? Should as few deviations as possible be made after a basic fare is adopted? He said that probably the railways will not all agree on the same fares but they will agree on fares that will have the most beneficial effect.

Pullman fares were discussed by E. P. Burke, passenger traffic manager of the Pullman Company, who called attention to the fact that in many instances passenger fares are such that what the traveler pays for sleeping is more than one and one-half times what he pays for riding. He said there is an opportunity for the railroads to adjust their rates so as to establish reasonable fares in Pullman cars.

That sleeping cars are an important factor in developing excursion business on week ends because they enable people to take longer trips was shown in the figure he presented. The data covered the low rate Pullman excursions which have been operated in non-competitive territory since May, 1931. In that year, 104 excursions, involving 617 cars, carried 18,115 passengers, while in the following year the number increased to 255 excursions, 1,626 cars and 42,712 passengers. The average loading of the cars was much higher than that of cars in regular service, being 29.4 persons in 1931 and 26.2 persons in 1932. In 1933, fewer excursions were operated but the business required 616 cars, while the passengers created totaled 15,625, or 25.3 per car. As of September, 1934, 86 excursions have been operated this year, involving 541 cars and 13,979 passengers, or 25.8 per car. As a result of these 544 excursions from May, 1931, to September, 1934, 90,431 extra passengers, or 26.6 per car, have contributed to the passenger and sleeping car revenues of the railways.

During the discussion of fare reductions, C. A. Kline, assistant passenger traffic manager of the Southern, described that railroad's experience in reducing rates. This railroad first decided on a two-cent rate but felt it would not compete with bus fares and, therefore,

would have to be lower to attract passengers. The carrier found that when the rate was reduced to 2½ cents, the number of passengers increased slightly and revenues declined, but when it was reduced to 1½ cents for distances of 150 miles, the volume of passengers as well as revenue increased as much as 100 per cent. On some branch lines, the increase was 775 per cent in the first month. During the first eight months of 1934, the Southern's revenue has increased 17 per cent, but the railroad is not certain that the 1½-cent rate will be profitable.

W. G. Brown, passenger traffic manager of the Baltimore & Ohio, reviewed trends in passenger traffic. His analysis showed that the passenger traffic density of the railways, passengers carried per mile of line, is now at the same point it was 60 years ago.

Handling Automobiles Creates Traffic

During the discussion of the handling of private automobiles in expedited freight service, J. V. Lanigan, passenger traffic manager of the Illinois Central; and G. P. James, general passenger agent of the Atlantic Coast Line, showed that much traffic is secured by this practice and that if the service were better known, the amount secured would be still larger. In 1929, when the charge was five fares for an automobile, the Illinois Central handled 131 vehicles, while in 1930 the number increased to 159 when the charge was four fares. In 1931 and 1932, the business fell off even though the charge was reduced to three fares, the number of cars handled in 1931 being 63 and in 1932, 76. In 1933, however, the charge was reduced to one fare and 376 automobiles were shipped.

On the Atlantic Coast Line the results were even more striking. When the charge was reduced to four tickets in 1932, this road handled 400 shipments, while in the following year when three tickets were required, the number increased to 2,529. The attitude of the public toward this service is well illustrated by the fact that fewer people drive their cars home than drive to their destination. Northbound shipments of automobiles on the Atlantic Coast Line are 15 per cent more than southbound.

Improvements in Passenger Train Service

Another subject given attention was developments and improvements in passenger train service. Robert Thomson, traffic manager of the Chicago & North Western, contended that while the new high-speed trains cannot be adopted by all railroads and in all services, they offer many possibilities and create a favorable impression. Because the public is clamoring for speed, he said, railroads should and can speed up many of their passenger train schedules.

A. Cotsworth, Jr., passenger traffic manager of the Chicago, Burlington & Quincy, said the Burlington built the Zephyr to effect economy of operation. About 27 per cent of the road's passenger train mileage consists of three to five-car trains which are unprofitable and the streamlined train, because it is cheaper to operate, was chosen to supplant the heavier trains. The out-of-pocket cost of motor cars is 25 cents to 35 cents per mile, while that of the Zephyr is between 33 cents and 35 cents. On the basis of 500 miles a day, the interest on the investment in the Zephyr is 8 cents a mile and depreciation at 8 per cent about 11 cents per mile, making the total cost of operating the Zephyr around 50 cents a mile. The Zephyr will operate between Kansas City, Mo., and Lincoln, Neb., on a 4-hr. schedule replacing two 5½-hr. trains which consist of two head-end cars, a partition coach and a 14-seat parlor cafe car. Nine stops will be made and the speed of the train will be 70 or 80 m.p.h. between stations.

Solicitation of Passengers

Another subject on the docket was the solicitation of passenger traffic. W. A. Philips, assistant general passenger agent of the Pennyslvania, called attention to the employment situation in city ticket offices and suggested that a plan be formulated which will take care of efficient young men laid off because of lack of seniority. Upon this suggestion, a committee was appointed to study the problem with the American Association of Railroad Ticket Agents. C. C. Howard, passenger traffic manager of the Erie, presented a paper on the selection and training of soliciting personnel, an abstract of which will appear in a later issue of the *Railway Age*.

In a paper on ticket scalping, H. A. Koach, manager of the Railway Ticket Protective Bureau, summarized the work of this bureau since 1930. At the present time, he said, state anti-scalping laws are in effect in 16 states while 35 city ordnances are in effect in as many cities. The bureau secured over 60 convictions this summer, while 7 bus sub-agencies were closed and over 300 tickets confiscated. He suggested that consideration be given to the securing of federal legislation to break up ticket scalping. A resolution appointing a committee to take the matter up with railway executives was appointed.

The effect of dining car service on traffic was discussed by L. M. Jones, superintendent of sleeping and dining cars of the Chicago, Milwaukee, St. Paul & Pacific. He said that as a result of air conditioning, passengers are more agreeable, easier to handle and eat and drink more hot foods. Peter Parke, chief engineer of the Pullman Company, spoke on the air conditioning of cars, describing the mechanics of the three types of equipment used—ice, mechanical and steam-ejector. He said it is not likely that new revolutionary means of air conditioning will displace the means now employed.

Bus and Airplane Service Improving

Developments in bus and airplane competition were reviewed by E. D. Osterhout, passenger traffic manager of the Reading and chairman of the Committee on Motor Coach Service and Competition; and C. E. McCullough, general passenger agent of the Pennsylvania and chairman of the Committee on Commercial Aviation Developments. Mr. Osterhout reported an increase in bus travel in the East and West and called attention to the progress made by bus lines in streamlining and air conditioning equipment and establishing sleeping car lines. Another development which he described was the 12-passenger limousines and the 7-passenger sedans which are becoming noticeable competitors of bus lines in cities. Better inspection of buses by cities and states, he said, has taken many unsafe buses off the highway and federal regulation will have further beneficial effect. However, he concluded that the railways even with such regulation will always have this competition.

Mr. McCullough reported considerable development in aviation. The miles flown by commercial transport planes increased from 36,945,203 miles in 1930 to 54,-642,545 miles in 1933, an increase of 47.9 per cent, while passenger miles flown increased from 103,747,249 in 1930 to 198,800,079 in 1933, an increase of 91.6 per cent. The passenger fare, which previous to 1930 averaged 12 cents per mile, averaged 8 cents in 1930 and 6 cents in 1933. Express and freight carried equaled 2,452,812 lb.

in 1933, contrasted with only 468,571 lb. in 1930, an increase of 423.5 per cent. Mail carried shows the only decrease, 7,816,532 lb. being carried in 1933, as compared with 8,513,675 lb. in 1930, a decrease of 8.2 per cent.

There is a noticeable trend to twin-motored or multi-motored planes, in place of the single and tri-motored types. Walls of cabins are being insulated against noise and the seatings per plane are being increased. Night flying has become common and several airlines have established sleeper plane service between larger centers. A cruising speed of 200 m.p.h. for commercial air transport planes is at present in daily service on several lines and a top speed considerably higher is frequently attained. The total fatal accidents in 1933 were only 9, the same as in 1930, but the miles flown per fatal accident were 6,071,393, as compared with 4,105,023 in 1930. The number of passenger fatalities in 1933 were only 8 or one per 24,850,010 passenger miles flown, while in 1930 the passenger fatalities numbered 24 or one per 4,322,802 passenger miles flown.

Rail and Air Fares Compared

A comparison of travel time and relative cost in each direction between a few selected cities served by railway and airway service and including Pullman charges is as follows:

Chicago-New York	
Plane—4 hr. 25 min.	$47.95
Rail—17 hr. 45 min. (includes $10 extra fare)	51.70
Chicago-Seattle	
Plane—15 hr. 10 min.	96.00
Rail—59 hr. 15 min.	80.09
Chicago-Los Angeles	
Plane—13 hr. 35 min.	115.00
Rail—53 hr. 45 min.	92.28
Chicago-New Orleans	
Plane—10 hr.	53.89
Rail—23 hr. 30 min.	34.88
New York-New Orleans	
Plane—13 hr. 50 min.	$74.27
Rail—35 hr. 15 min.	52.64
New York-Miami	
Plane—12 hr. 30 min.	72.53
Rail—32 hr. 45 min.	53.79
New York-Los Angeles	
Plane—18 hr.	160.00
Rail—71 hr. 30 min. (includes $20 extra fare—does not include 1 hr. 30 min. between trains)	137.34

Optimism Expressed by L. W. Baldwin and H. G. Taylor

Optimism as to the future of the railway passenger business was expressed by L. W. Baldwin, president and co-trustee of the Missouri Pacific, who spoke at the opening of the meeting; and H. G. Taylor, chairman of the Western Association of Railway Executives, who spoke at the annual dinner. Mr. Baldwin said:

In spite of the perplexing situation, I firmly believe that we will arrive at a satisfactory solution of the transportation problems of the nation. There is every good reason to believe now that the national administration will soon begin the preliminary steps leading to a stabilization of the entire transportation industry. As we gradually work our way out of our economic troubles in this country, we will become more and more dependent upon adequate and reliable railroad transportation.

Some of the things we all can do include an intensified solicitation effort on the part of every railroad employee and particularly those under your own supervision. I am afraid that too many railroad people have been suffering in recent years from a fear complex. They have been obsessed with the thought that other forms of transportation were cheaper or more elastic or enjoyed some other advantage. All that railroad representatives need is to get their heads up and their chins out and to throw out their feet.

Cleanliness of passenger cars—and I mean every car in the train—should have our continued attention. Not only should all cars be scrupulously and spotlessly clean when leaving terminals but they should be kept that way enroute so that passengers can get on a train between terminals and always find a clean and comfortable place. We need to watch tirelessly to the end that there always is a sufficient supply of soap and towels, ice water, etc., at all times throughout the entire trip of each train. These are little things that make life pleasant.

Every railroad organization in America today is providing little added services for patrons which are not generally known or understood. We need to devise some way to inform the public of all of the little super-services that are available to them and, of course, we need to continue to work to the end that we may increase and improve such services. We are doing a lot of things that people do not know we are doing. We need to study our schedules continuously to be certain that we provide the public with all of the service that can be justified and supported and we need to work together in the future, as we have in the past, with through routes and through rates and through service.

Public Will Travel

Mr. Taylor said in part:

Whatever it may have done to our nerves and our pocketbooks, the automobile has eliminated provincialism in this country. The National Automobile Chamber of Commerce estimates that in 1930 the passenger miles in automobiles had reached the stupendous figure of 400,000,000,000. Traveling has become a national habit. Is it too much to assume that that habit will not always be satisfied with highway accommodations? Hazards, discomforts and costs are increasing on our highways. The unexpectedly large train travel to the Century of Progress demonstrated that there may be times and occasions when people prefer to leave the car in the garage. Perhaps it is our opportunity to make railroad travel so comfortable, safe and inexpensive as to tempt the rider from the automobile to the train much more frequently than we have in the past. There is a veritable mine of potentialities in 400,000,000,000 passenger miles. My observation is that an increasing number of private automobile users are already beginning to tire of long trips by car. The monopoly of the roads by mammoth trucks and buses, the lengthening list of fatal casualties, the strain of driving and other discomforts, constitute disadvantages that are beginning to receive consideration. Probably no fewer automobiles will be owned, but somewhat upon the theory of the diminishing return they may have reached the climax of use and hereafter will yield to other forms of transportation some of the traffic they have absorbed.

Research and experiments are going forward constantly. Metallurgists tell us that we are only on the threshhold of discoveries that will result in lighter and stronger metals that can be produced at reasonable costs. We know that the designers of Diesel type motors look forward to speedier and more economical engines than have yet been produced. Even the manufacturers of the steam locomotive warn us that the marvelous improvements they have made in the last 10 years have not ended. In other words, the scientists are working for us, and we can reasonably expect that with their assistance we will be able to sell an increasingly attractive passenger service at prices that will compare with those charged by any competitor.

Eastman Inquires Into Railroad Selling Methods

WASHINGTON, D. C.

CO-ORDINATOR Eastman has recently issued one of his most inquisitive questionnaires. He wants to know, among other things, what a railroad freight or passenger solicitor thinks about his job, his railroad, the personality and methods of his competitors, how he spends his time, and above all what are the results of his efforts. He has addressed to the executives of Class I railroads, the executives of all rail carrier traffic associations and bureaus, and to a large number of shippers, a series of questionnaires asking dozens of questions and calling for many columns of itemized information in connection with an Organization and Marketing Survey. This is the fourth and last of the major surveys undertaken by his Section of Transportation Service, under the direction of J. R. Turney, director, to obtain detailed information regarding the railroads' selling and soliciting methods and their organization for that purpose.

Railway Inquiry Includes Eight Forms

The Rail Carrier Inquiry includes eight forms. Forms 1, 2, and 3 deal with traffic department organization and policies, both freight and passenger.

Form 4 calls for a report from each freight traffic department agency, summarizing that agency's expenses,

activities, and results of those activities as reflected in the number of patrons, calls made upon them and traffic obtained, classified by commodity groups and volumes.

Form 5 is an individual return to be answered by each officer and employee of the freight and passenger traffic departments and is a record of their age, education, experience, duties and distribution of time worked in a typical week.

Form 6 is an individual return to be made by each freight traffic officer and employee whose duties include solicitation and provides information as to calls made and shippers' requests for service. It also calls for opinions as to solicitation methods used and possibilities for improvement.

Form 7 analyzes advertising expenditures and results, (passenger, freight, and institutional), and is returnable by December 1. Information called for on the other forms is asked by November 10.

Form 8 deals with respondent's general office organization (other than traffic) and station agents. It segregates general office forces and compensation between departments and classifies positions between those which contact patrons regularly and those which do not. It calls for certain information with respect to carrier train and car schedule agreements and time table conferences. It also calls for a statement from carrier executives as to advertising policies. Finally it provides for summaries of the age, education, and experience of all station agents and also of the organization and activities of carrier's public relations and economic research departments.

Other inquiries were sent to freight and passenger rate and classification bureaus for information as to their expenses and activities, and to shippers asking their opinions of railroad freight solicitation and suggestions for improvement.

Question 11 on Form 4 is a summary of solicitation calls and results to be worked up separately for each freight traffic department agency. The first step is to list all shippers and receivers of freight who were called upon by the agency representatives during 1933, but Mr. Eastman's organization also wants to know the volume of traffic handled by the respondent as a result of those calls.

Form 5, calling for a detailed report of a typical week of a solicitor, calls for time distribution as to 24 items further subdivided into six columns, while an additional question asks how many hours of the working day on the average are spent traveling from point to point on company business, subdivided by train, bus, ferry or boat, auto, walking or street car.

In Form 6, intended to develop the views of railroad solicitors as to the effectiveness of present railroad solicitation methods and possibilities for improvement, which are to be kept confidential by the Co-ordinator's staff and published only in summary form, questions are asked as to which fair and complete replies could not always be expected from the man himself so he is asked to reply for other solicitors with whom he is acquainted. Questions such as how many have an unusually attractive or pleasing personality, average personality, unattractive personality, or repellant personality. These same questions are also asked of the shippers. Those who reply are also asked to state, for the solicitors they know, how many in their sales efforts rely chiefly upon: stressing features of the transportation service of their particular railroad; manner or method of their salesmanship; stressing incidental and accessorial services such as car tracing, claim settlements, etc.; personality, friendship, entertainment or all around good fellowship; or other methods (to be explained).

Fire Protection Group Holds Meeting at Chicago

FIRE losses on the railways of the United States reached a new low for the last ten years in 1933 when they totaled $4,243,534, as compared with the previous low of $5,104,430 established in 1932, and a high of $11,580,005 which was reached in 1924, according to figures contained in the report of the Statistical committee of the Railway Fire Protection Association, which held its twenty-first annual meeting at Chicago on October 16-17. The meeting, which was held in the Congress hotel, was presided over by W. F. Hickey, president of the association, and superintendent of insurance of the New York, New Haven & Hartford. Consideration was given at the meeting, among other things, to problems presented by the shipping of loaded truck trailers on flat cars, methods of handling gasoline shipments, fire protection at timber treating plants and storage yards, improved bridge protection systems and fire alarm systems.

In his opening address Mr. Hickey referred to the low level reached by fire losses in 1933, and said: "This reduction in fire loss for last year, in view of the extremely difficult conditions prevailing, is remarkable because in these times the conservation of property, resources and revenues is of the utmost importance. That the personnel on the railroads that is charged with the responsibility for fire protection has been of necessity somewhat restricted, suggests the thought that possibly we are coasting along on the momentum achieved in previous years. However, my belief is that the railroads have accepted the challenge presented by the extremely difficult conditions prevailing and have intensified their efforts in the conservation of property, with the gratifying results reflected in the figures on fire losses."

Mr. Hickey said that with the railroads engaging in other form of transportation, particularly by bus and truck, the duties and responsibilities of the members of the Railroad Fire Protection Association have been broadened so that this name does not adequately explain the scope of the work involved. As a solution he advocated that the association take steps to change its name to the Transportation Protection Association. No action was taken on this proposal.

One of the matters discussed at the meeting was the question of affiliating with either the American Association of Railroads or the National Fire Protection Association. No decision was reached, but the Executive committee was instructed to make a study of the possibilities with the idea of making a recommendation at the next meeting. Pending any action that may be taken along these lines it was voted to retain the present officers for another year. In addition to Mr. Hickey these include: Vice-president, W. H. Klinsick, fire prevention engineer, Chicago, Burlington & Quincy; and secretary-treasurer, R. R. Hackett, superintendent of insurance, Baltimore & Ohio.

Statistical Report

The report of the Committee on Statistics was presented by F. R. Bradford, director of safety and fire protection, Boston & Maine, in the absence of Chairman, J. E. Fraser, general fire protection agent of the B. & M. For 1933, 68 railroads reported a total fire loss of $3,744,949, as compared with $5,018,930 reported by 72 railroads in 1932. The figures representing the total

loss for all railroads that were quoted previously were computed from the totals of reported losses on the basis of the average loss per mile. It was pointed out that comparisons of the fire loss figures with those of previous years are affected somewhat by property depreciation and that the decline in fire losses may be attributed, in part, to the smaller value at which the property is carried. While this may be true to a certain extent, the figures presented by the committee show a reduction in the average number of fires per railroad from the previous low of 86.8 in 1932, to 78.2 in 1933, while the average number of fires per mile decreased from 0.024 to 0.023. In 1924 the average number of fires was 103.8 per railroad, and the average number per mile was 0.038.

Causes of Fire Losses

In 1933, trespassers were responsible for fire losses totalling $649,448, or more than was attributed to any other single cause. Fires attributed to "exposure" caused damage amounting to $308,973, while wrecks were next with a loss of $306,068. Fire damage amounting to $826,848 was attributed to unknown causes. Other causes, together with the respective losses, are as follows: Electric power and motors, $294,432; sparks or hot coals from locomotives, $143,926; incendiary, $135,719; improper construction, installation, and maintenance of stoves, $130,293; and smoking and matches, $100,634.

Damage to property other than equipment accounted for $2,152,137 of the total fire loss, while rolling stock was destroyed by fire to the extent of $1,574,608. Of the latter amount, 1,595 fires in box cars caused a loss of $897,284, of which $396,152, caused by 797 fires, was attributed to acts of trespassers. Enginehouses and blacksmith shops, with a combined loss of $323,392, suffered during 38 fires, showed the largest loss of any single classification of fixed property.

In a brief address R. C. Bardwell, superintendent of water supply of the Chesapeake & Ohio, and chairman of the Committee on Water Service and Sanitation of the American Railway Engineering Association, explained that his committee had been charged with the responsibility of making a study of the engineering phases of fire protection and that it was ready to co-operate with the R.F.P.A. He added that it is the duty of the water service department to co-operate in the fight against fires by assuring a constant supply of water at the proper pressure at all times. Answering a question, Mr. Bardwell said that normally in railway service the same system of water distribution is used for both service and fire fighting purposes.

Motor Trucks Present Problem

That the practice of shipping loaded motor truck trailers in flat cars has presented a new problem in fire protection was revealed in a discussion by J. R. Cooke, an inspector for the Bureau of Explosives of the Interstate Commerce Commission. Not only is it difficult, he said, to put placards on such cars, but the motor transport people are reluctant to follow instructions. Moreover, he said, a recent survey revealed that a variety of dangerous articles was being shipped in such trucks.

Mr. Cooke also described an accident, involving five fatalities, that occurred when a man attempted to remove the dome cap from a tank car of gasoline that gave indications of considerable internal pressure due to the extremely hot weather prevailing at the time. A good rule to follow, he said, is never to attempt to do this when there are indications of internal distress. In support of this rule Mr. Cooke explained that the vapor from one gallon of gasoline has as much explosive power as 83 lb. of dynamite.

An interesting phase of the meeting centered around a discussion of the most effective measures for preventing and fighting fires at timber treating plants and in storage yards for treated timber. There was considerable discussion of the relative merits of water and foam as agencies for putting out fires in treated timber, those present being divided on this question. An experiment was described in which a pile of refuse timber and oil 20 ft. high was ignited, after which the fire was extinguished in less than 2 min. by the application of foam. Mr. Bradford said that in order to facilitate the handling of hose by one man at treating plants, the Boston & Maine has replaced its 2½ in. hose with hose 1½ in. in diameter. It was agreed in this discussion that the comparatively new practice of storing treated timber in large quantities at concentration points has created a new problem in fire protection which as yet has not been solved with complete satisfaction.

Bridge Protection Systems

The protection of bridges and trestles from fire damage was given considerable attention at the meeting. While it was generally agreed that water barrels on bridges could not yet be dispensed with, two new types of protection were described. One of these consists of a hose line with outlets at intervals in which the opening of the valve at any one of the outlets causes the master valve for the line to be opened, thereby flooding the entire line. The other involves the use of a code system connected with the train dispatcher's line, by means of which the dispatcher is notified automatically of the outbreak of a bridge fire. The latter device is still in the experimental stage. One railroad has adopted the practice of spraying its bridges with water during hot, dry weather by means of sprinklers attached to the engine tenders.

M. W. Oettershag, harbor engineer for the Chicago department of public works, spoke briefly on the necessity of providing under-deck systems of fire protection at piers, such as sprinklers and fire walls. Mr. Oettershag also contended that, since property of great value is entrusted to the care of watchmen during a large proportion of the time, men of intelligence and integrity should be chosen for this work.

Fire Alarm Systems

In a paper on fire alarm systems, de Witt Rapalje of the Raritan River Railroad emphasized the importance of the time factor in reporting fires. "The purpose of fire alarm signal installations," he said, "is to carry the news of a fire to those who must fight it in the shortest possible time after its discovery. If the discovery must be made by a human patrolman and the alarm must be sent in by manual operation of an electrical transmission system, such notice may, and frequently does, arrive too late to serve any other purpose than to summon the firemen to come and spray water on a raging bonfire or keep the foundations cool.

"Only by the installation of modern thermostatically-operated automatic fire alarm systems can the news of a fire be transmitted immediately after the incipient fire has caused an appreciable rise of temperature at the point of combustion. The human factor must be eliminated if fires are to be detected at birth and snuffed out in infancy."

Other reports were presented by committees on Bridges and Trestles, Fuel Oil, and Merchandise in Transit—Explosives and Other Dangerous Articles.

Norfolk & Western System-Wide Meeting

Night session phonecast carries program of Better Service Conference to local meetings

A SYSTEM-WIDE meeting broadcast over a telephone hookup to all local Better-Service clubs participating in the night session, was employed by the Norfolk & Western on September 14 as a "germinating point" for a new and broader conception of railroad service—what it means to the railroad, to the family and to the public. On that date the first annual Better Service conference, which superseded the annual system efficiency meetings, was held at Cincinnati, Ohio. During the day, 300 employees met collectively and in groups to discuss ways and means of improving service on the railroad, while at an evening session addresses were made by W. J. Jenks, vice-president in charge of operation of the railroad, and Samuel O. Dunn, chairman of the board of the Simmons-Boardman Publishing Company and editor of the *Railway Age*.

In choosing the theme for the meeting, four phases of service from an industrial standpoint were selected—service to the public by the railroad, service to the public by the employees, service to the railroad by the public, and service to the railroad by the employees. These four divisions of better service were considered by four committees, while a fifth committee studied better service publicity.

The meeting, over which J. B. Baskerville presided, opened with a general session at which Robert W. Nelson, executive vice-president of the Cincinnati Chamber of Commerce; J. E. Crawford, general manager of the railroad; and Joe Marshall, special representative of the Freight Claim division of the Association of American Railroads, were the principal speakers. The afternoon session was given over to a general discussion of committee reports and an address by Col. W. S. Battle, vice-president in charge of real estate, valuation and public relations.

The report of the Committee on Service to the Public by the Railroad dealt primarily with the outstanding services rendered the public, emphasizing the development of natural resources, industrial and agricultural progress, social unity and advancement, and their dependency upon adequate railway transportation. "The first duty of a railroad to the public," according to the report, "is to provide an efficient, economical, safe and adequate freight and passenger transportation. The Norfolk & Western has spent nearly 100 years developing that service—'precision transportation.' Continuously, the railroad is fulfilling a great public trust. It serves the shipping public with the finest equipment that can be built. Within a recent five-year period, the railroad expended more than $40,000,000 for additions to equipment and put into service approximately 14,000 units of new or rebuilt rolling stock. In 1930 alone, its equipment bill was approximately $12,500,000. It has expended within recent years more than $7,600,000 for the expansion of its tidewater facilities at Lambert Point and Sexwall Point.

"Service to the public also includes the protection of the shipper's dollar by accurate weighing. Under normal conditions, the railway annually loads on its own lines and receives from connections about 1,500,000 carloads of revenue freight. Approximately 80 per cent of this traffic is weighed on railroad scales. To provide this service, the Norfolk & Western maintains and owns, in addition to its master scale, 50 track scales, 39 counter scales, 296 portable platform scales, 216 built-in platform scales and 16 wagon or automobile truck scales.

"Besides the transportation of freight and passengers, the Norfolk & Western has shown by exhaustive laboratory tests that coal mined on the railroad is one of the most economical and satisfactory fuels on the market. It has established coal bureaus at strategic points throughout the United States to render all possible assistance to producers, distributors and consumers of this coal. It operates livestock cars that were built to permit the maximum of light and air and designed so that the animals may be as comfortable as possible enroute. There are livestock pens on the railway where the stock may be unloaded, watered and fed. Provision is also made for spraying the animals in hot weather.

"The railway also serves the public by providing modern equipment for the transportation and care of perishable foodstuffs—gruits, vegetables, meat, eggs, poultry and seafood. At strategic points along the line, the railway operates 12 icing stations. These, together with an adequate supply of refrigerator and ventilated cars and fast schedules, insure the safe and expeditious movement of perishable foodstuffs. During a normal year, the railway handles approximately 30,000 cars of perishable food, requiring 22,525 tons of ice and refrigeration."

Service to the Public by Employees

The report of the Committee on service to the Public by the Employees set forth that all railroad service to the public is based on service to the public by the railroad's employees, for "the employees are the railway." "Service to the public by Norfolk & Western employees," the report said, "should mean a keener interest and a more active participation in the affairs of our local better-service clubs. The club meeting should be a forum in which every Norfolk & Western worker should have something to say, for it is only through an interchange of ideas that we can devise new ways and means of making better service to the public a reality.

"Courtesy is the heart of a railway employee's service to the public and regardless of the excellence of the railroad's plant and equipment, its fast schedules and other advantages of the transportation agency, courtesy is essential to getting business and to holding it. The freight and ticket agents, the traffic solicitors, passenger conductors, brakemen, flagmen, dining car stewards and all other employees with whom the public comes in contact are largely responsible for the public's attitude toward the railroad.

"Norfolk & Western employees are substantial citizens

of the communities in which they live. As railroad workers and as citizens, they can serve the public by taking a keener interest in public affairs. They should take an active part in a worthy movement for civic betterment and social welfare. They should take a more active part in educational affairs and in the operation of their government, local, state and national. Their individual and collective thoughts and actions, directed toward the betterment of the restricted communities, can be a distinct public service."

Service to the Railroad by the Public

The report of the Committee of Service to the Railroad by the Public stressed the importance of the railroads to the public as the largest corporate consumers of the products of other industries and the largest single employers of labor. "Normally," the report continued, "they support 4,000 mills and factories which supply their needs. The Norfolk & Western normally spends between $20,000,000 and $25,000,000 a year for materials and supplies, in addition to other millions of dollars for additions and improvements to its property. Through its army of employees, even in times of depression, it pays approximately $28,300,000 annually in wages and salaries. These are vital contributions to the prosperity of the territory through which the railroad operates. The railway and its employees patronize local industries and commerce.

"Through years of experience, experimentation and study, the Norfolk & Western has stimulated a vast store of valuable information on the loading, stowing and transit handling of freight, hence the railroad is qualified to give expert advice on packing and crating freight to insure safe handling. To derive the maximum benefit from this knowledge, shippers can render a valuable service to the Norfolk & Western by asking for this information and by using the improved container designs and methods of crating freight.

"The Norfolk & Western maintains an efficient industrial and agricultural department to aid in industrial and agricultural development. Members of the department know conditions in every locality and community on the railroad. They work with the manufacturer already located in the territory to solve his problems and to aid in the successful operation of his plant. They assist farmers and orchardists to increase crop production, improve livestock and secure proper marketing facilities. In view of these facts, it is not only of vital interest to the public welfare to support the railroad and aid in its development, but it is the public's duty, for when industry and agriculture give their business to the railroad's subsidized competitors, they are helping to destroy the agency which has made possible the unparalleled economic growth and social integration of the American nation."

Service to the Railroad by the Employees

The Committee on Service to the Railroad by the Employees emphasized the place of the employee in loyalty and co-operation, in the solicitation of traffic, public relations work, efficiency of operation and safety. "Loyalty to the railroad for which one works," the report reads, "is one of the first principles of success for the individual and also for the railroad. Therefore, service to the Norfolk & Western by its employees means first of all, loyalty to the railroad expressed in the form of a sincere interest in its affairs and its general welfare and progress. It means that we must fight for our railroad. As members of the Norfolk & Western family we enjoy many privileges which are not accorded the employees of other industries. These privileges make for better living conditions, both in our work and in our social life. As members of the Norfolk & Western family loyalty expressed by action whenever necessary should be the dominant characteristic of our service to the railway.

"The recovery of lost traffic and the development of new business is essential to the future success of our railway and to our individual welfare. Every Norfolk & Western employee should consider it a part of his service to his railroad to work consistently to that end. There are innumerable ways that employees may secure and pass on to the traffic department valuable information regarding freight and passengers moving into and out of their respective communities. The accumulative effect of the active efforts of the thousands of Norfolk & Western workers to regain lost business and to get new business would be tremendous.

"Norfolk & Western employees can serve their railroad effectively and profitably by aiding in public relations work. They must first inform themselves so that they can talk intelligently on railroad matters. They should be prepared at all times to refute mis-statements and malicious propaganda against their railway, and they should have a good general knowledge of the railroad's facilities and service so that they can tell the shipping and traveling public about the safety, convenience, speed, dependability and comfort of Norfolk & Western service."

Better Service Publicity

The Committee on Better Service Publicity discussed newspaper publicity to acquaint the public with the service and problems of the railroad, the employee magazine as a medium for informing the employees of the developments on their railroad and word-of-mouth advertising by employees as an additional medium for acquainting the public with railroad facts. "Favorable newspaper publicity," according to the report, "is one of the most effective methods of interpreting the activities of our railroad, our activities as employees and the activities of our Better Service clubs to the public. It is one of the most effective methods of selling the railroad and transportation service to the public and of building good-will for the railroad."

This committee, which is composed of recently appointed reporters for the 21 better service clubs along the line, has formulated plans to obtain more widespread and more favorable newspaper publicity on the activities of the Better Service clubs, the railroad and its employees.

Codes Discussed

Mr. Crawford, in his address at the morning session, discussed the codes of the National Industrial Recovery Act, saying that these codes, which are in effect a partnership between business and government for the regulation of wages, hours of labor and prices, especially in the larger establishments, have been successful. Business men under them, he said, are on trial to provide for fair competition, uniform prices and wages and the elimination of sales below cost. The orderly observance of rules and regulations is taking the place of anarchy in business. "A recent poll of trade associations," he continued, "showed that 95 per cent were favorable to continuing the codes, although some complained bitterly of some administrative features of the program, feeling that administrative action had hindered rather than helped industrial recovery."

He also discussed the attitude of the administration toward the railroads, saying, "The President, in preelection speeches, was particularly emphatic about the

necessity for maintaining the financial stability of the railroads. In the face of such assurance, it is difficult for us to understand the acts of the administration tending to strain railroad credit and force a still larger number of railroads into bankruptcy, unless, as some believe, the purpose is to force the railroads into government ownership. The trend of public policies as they affect the railroads is serious and will continue so unless railroad employees take vigorous action.

"Government ownership has been an expensive experiment in Canada where, on the 23,000 miles of the Canadian National System, which is government owned and operated, the available net earnings in its best year were only enough to pay one-third of the interest bill. During a 10-year period, Canadian taxpayers had to pay an accumulated deficit of $456,000,000. During the same period, the privately owned Canadian Pacific earned $313,000,000 net above interest payments. The Royal Commission blamed the deficit largely on political pressure and extravagance. It has been estimated that government ownership of railroads in the United States would cost the taxpayers over $700,000,000 a year above all earnings.

"Railway mileage, now in receivership, is the largest in the history of the United States These railroads are asking, 'where will the railroads get the money to meet the greatly increased expenses as the direct and indirect result of governmental action?' The government has taken no steps to equalize competitive conditions or to increase railroad revenues. Subsidies to such competing forms of transportation, as waterways and highways, have been increased. No legislation for federal supervision of motor or water transportation has been adopted."

Mr. Marshall cited the national loss and damage bill of the railroads as the yardstick for measuring railroad efficiency. He discussed loss and damage and its relation to increasing relation to increasing train speed and referred to many of the causes for damage to lading as well as devices and methods employed for prevention.

Government Ownership Considered

Col. Battle discussed government ownership, saying that if the people want it, they have a right to it, but asking who is going to pay the taxes when the state quits taxing the railroads. To show the importance of the initiative which has made possible the development of the country he said, "The United States represents little less than six per cent of the people of the world and less than six per cent of the land area, but even after the depression in the years through which we have gone there are 76,000,000 life insurance policies and savings accounts totaling $92,000,000,000, one-third of the railway mileage of the world, 73 per cent of the motors, 58 per cent of the telephones, 32 per cent of the coal produced, 62 per cent of the petroleum pumped, 35 per cent of the copper mined, 34 per cent of the pig iron and 37 per cent of the steel produced, 52 per cent of the world's corn and 62 per cent of its cotton.

In proportion to her population, she possesses more public schools, more institutions of higher learning, more libraries, more hospitals, more free clinics, more asylums and institutions for the defective, publishes more newspapers, periodicals and books, has more and better music and theatres and movies than any nation on earth. Her people possess more radios, more electric lights, more electric irons and washing machines, more heated homes, more bath rooms, more of every one of the things which make for ease of life and freedom from drudgery than those of any other nation. These results have been produced, not because she has greater riches, not because she has greater intelligence and finer minds than other people, but because the political and social system which is a part of the American Constitution, has provided a greater incentive for the use of those minds in the development of her riches than any other system yet devised."

At the night session, Mr. Jenks cited reasons for the success of the Norfolk & Western and introduced Mr. Dunn. An abstract of Mr. Dunn's address appeared in the *Railway Age* of September 15.

Eastman Halts Change In Chicago-Florida Trains

WASHINGTON, D. C.

CO-ORDINATOR Eastman on October 25 issued his first order for the purpose of preventing an "unnecessary duplication" of railroad passenger service, acting at the request of Charles M. Thomson, trustee of the Chicago & Eastern Illinois, and contrary to the advice of the three Regional Co-Ordinating Committees representing the railroads, to prohibit the Louisville & Nashville from discontinuing the interchange of through passenger train equipment with the Chicago & Eastern Illinois at Evansville, Ind., and substituting such interchange with the Cleveland, Cincinnati, Chicago & St. Louis (New York Central) which also has a line between Chicago and Evansville. The proposed substitution was to have been made effective on October 28 as to the "Dixie Flyer," the "Dixie Limited," the "Dixie Express," and the "Dixie Mail" trains between Chicago and Florida and other southeastern points.

After a bitter controversy between the interested roads on the subject, which the Co-ordinator had referred to the co-ordinating committees for investigation and any action they were prepared to take under the provisions of the emergency transportation act, Mr. Eastman issued a report and order including a finding that the proposed change would "result in unnecessary duplication of services and facilities and the elimination of a route now existing without the consent of all participating lines" and would "unduly impair the net earnings of the Chicago & Eastern Illinois" and "result in wastes and preventable expense."

This finding was made on the ground that, as contended by the Chicago & Eastern Illinois, it would be required to continue the operation of its trains between Chicago and Evansville for mail, express, and local passenger traffic even if it is deprived of its connection with the L. & N. for through traffic which has been in effect for some fifty years. The order also included a finding that the Regional Co-ordinating Committees of the Eastern, Southern, and Western groups "are unable to carry out the purposes" set forth in the emergency act by voluntary action and have "failed to recommend to the Co-ordinator that he give appropriate directions" to the three railroads by order, "and have not acted with respect to the matter which the Co-ordinator brought to the attention of said committees." He also found that an order directing the L. & N. and the C. & E. I. to continue the present interchange and directing the L. & N. and the Big Four not to establish their proposed interchange will be consistent with public interest and in furtherance of the purpose of the law.

Because Mr. Eastman's orders, under the law, do not

become effective for 20 days, the Chicago & Eastern Illinois on the same day obtained an injunction from the federal court at Chicago to restrain the L. & N. and the New York Central from making the change effective.

In his report Mr. Eastman recited that on September 25 the Chicago & Eastern Illinois received notice in writing from the Louisville & Nashville that the New York Central had offered to establish over its line between Chicago and Evansville through passenger service to points on and via the Louisville & Nashville comparable to that which has been operated in connection with the Chicago & Eastern Illinois; that the advantages to the Louisville & Nashville from such service appeared to be such that it could not properly decline the proposal; and that it would therefore be necessary on October 28, to discontinue the interchange at Evansville of through passenger train equipment with the Chicago & Eastern Illinois. This was the first notice which the Chicago & Eastern Illinois had received that such a step was contemplated.

The Chicago & Eastern Illinois, he said, is a comparatively small road which is now in the hands of a trustee appointed by the United States district court, and "the proposed discontinuance in service was, therefore, extremely serious to it." The trustee at once took the matter up with the management of the Louisville & Nashville, but without success. Thereupon, on October 1, he filed with the Co-ordinator a letter and accompanying memorandum alleging that the proposed change would result in "wholly unjustifiable duplication of service and waste of transportation." On October 2, copies of this letter and memorandum were sent by the Co-ordinator to the three Regional Co-ordinating Committees of the carriers with a request that they investigate and report to him as soon as possible what action, if any, they were prepared to take. The Louisville & Nashville is allocated to the Southern region; the New York Central, to the Eastern region; and the Chicago & Eastern Illinois, to the Western region.

On October 19, 1934, the Co-ordinator received a letter from H. G. Taylor, chairman of a joint meeting of the three co-ordinating committees, presenting the findings of these committees. These were to the effect that the railroads concerned are within their rights in establishing the proposed through service; that substantial advantages will accrue to the Chicago-Florida service of the so-called Dixie route if the New York Central handles through cars between Chicago and Evansville; that it was represented to them that no material capital expenditures are necessary and that the cost of maintenance of New York Central track and Chicago & Eastern Illinois track between Chicago and Evansville will not be increased substantially; and that the question of what service shall be continued on the Chicago & Eastern Illinois after the change is one which must be determined by later developments. The letter was accompanied by a response of the New York Central Lines and Louisville & Nashville Railroad Company to the protest of the Chicago & Eastern Illinois, which response was signed, not only by the president of the two lines mentioned, but also by the president of the Nashville, Chattanooga & St. Louis.

In addition to findings, the letter signed by Mr. Taylor in behalf of the committees set forth a compromise proposed by the Louisville & Nashville and the New York Central. On October 19, the trustee of the Chicago & Eastern Illinois filed a letter with the Co-ordinator rejecting this compromise and accompanied by a reply to the memorandum submitted by the New York Central and the Louisville & Nashville. Copies of the letters and replies were attached to the report and order as exhibits.

The Co-ordinator, through his staff and within the limited time available, has made an independent investigation of the facts in this matter.

In their memorandum the New York Central and the Louisville & Nashville had taken the position "that the question in its ultimate form is whether managerial judgment is to control or whether public authority shall substitute its opinion, not in a matter of public regulation, but in a detail of management." Commenting on this and discussing the other arguments advanced, Mr. Eastman said in part:

All public regulation is necessarily an interference with managerial discretion, but it is clear that as a matter of policy such regulation should be held to the minimum required by the public interest. Prior to the Emergency Railroad Transportation Act, 1933, it was not the policy of the federal government to undertake any control of railroad management for the purpose of eliminating or avoiding such evils as "unnecessary duplication of services" and "wastes and preventable expense." In order "to foster and protect interstate commerce in relation to railroad transportation by preventing and relieving obstructions and burdens thereon resulting from the present acute economic emergency, and in order to safeguard and maintain an adequate national system of transportation," the Emergency Railroad Transportation Act, 1933, was passed. For a temporary period, under existing emergency conditions, the Federal Co-ordinator of Transportation was given power, subject to the review of the Interstate Commerce Commission and if the railroads would not act voluntarily, to require the elimination or avoidance of the economic evils above mentioned, among others.

That the public interest is vitally affected by such matters, particularly under present economic conditions, is demonstrated not only by the general financial weakness of the railroad industry, but by the situation of such a road as the Chicago & Eastern Illinois. That road is in dire financial straits and in no condition to endure such a further blow as is now aimed at it. This blow is to be struck on October 28, unless the Co-ordinator is able to intervene.

As the law stands, it is clearly the duty of the co-ordinator to intervene by order in this instance, in view of the failure of the carriers' regional co-ordinating committees to act, if the facts disclose that the change in service proposed by the Louisville & Nashville and the New York Central would result in "unnecessary duplication of services" or "other wastes and preventable expense."

The distance from Chicago to Evansville is 287.3 miles via the Chicago & Eastern Illinois and 288.75 miles via the New York Central. The former route has 162.2 miles of double track, block signals over the entire distance, and 145.2 miles equipped with automatic train control. The New York Central route has only 92.06 miles of double track, only 33.8 miles equipped with block signals, and is without automatic train control. The speed limit for passenger trains on the Chicago & Eastern Illinois is 70 miles per hour. Certain sections on the New York Central route are limited, respectively, to 55 miles and 45 miles per hour. That route is now used primarily for the handling of freight. The Chicago & Eastern Illinois route has been equipped at large expense for the handling of fast passenger service.

It is probably true, as claimed, that passenger trains can now be operated over the New York Central route at the present speeds of corresponding trains now operated over the Chicago & Eastern Illinois. Men of operating experience on the Co-ordinator's staff, however, are of the opinion that they cannot be operated with equal safety, comfort, and convenience to the public without substantial additional expenditures for capital improvements and maintenance. This seems obvious from the facts above stated.

Excluding points served by both roads, the Chicago & Eastern Illinois route directly serves a population between Chicago and Evansville of 137,488, according to the last census. The New York Central route serves a population of only 46,295.

Owing to the high-grade passenger service which it has operated for many years, the Chicago & Eastern Illinois carries much mail and express on the trains which it is proposed to discontinue. In 1932, when railroad earnings were at a low point, the trains earned 62 cents per mile from mail, 14 cents from express, and about 46 cents from local passenger and incidental services, making total earnings from these services of $1.22 per train-mile. The experts of the Co-ordinator agree with the management of the Chicago & Eastern Illinois that such earnings would justify the continued operation of the trains, even if through

(*Continued on page 554*)

Additional Officers of A.A.R. Elected

WASHINGTON, D. C.

FURTHER progress in the organization of the new Association of American Railroads was taken when the board of directors met in Washington on October 31 and elected additional officers, although three vice-presidents are still to be elected. The executive committee also held a meeting but made no announcements. J. J. Pelley, president of the association, has taken up his headquarters at Washington.

M. J. Gormley, who since April 1, 1933, has been president of the American Railway Association, was elected executive assistant to the president. James R. Downes, who has been assistant vice-president of the Pennsylvania, was elected vice-president in charge of operations and maintenance. Harold J. Forster, who has been secretary and treasurer of the American Railway Association, was elected secretary and treasurer of the new association, and Stanley J. Strong, who has been secretary and treasurer of the Association of Railway Executives, was elected assistant secretary and treasurer. Fairman R. Dick, a member of the investment firm of Dick & Merle-Smith, of New York, was appointed advisor on finance and credit. Vice-presidents are yet to be named for the traffic, finance, and planning and research departments.

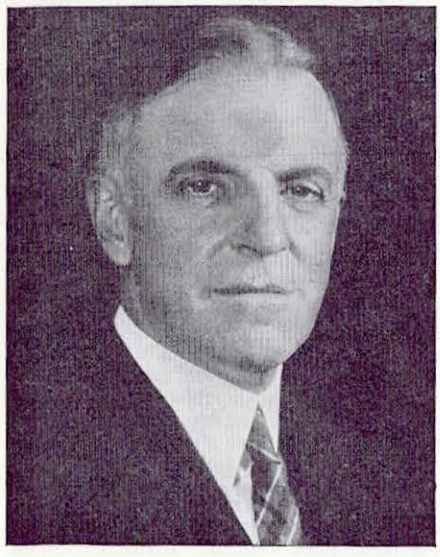
The law department had been previously organized by the election of R. V. Fletcher as vice-president and general counsel, Alfred P. Thom as associate counsel, and J. Carter Fort as general solicitor.

The department of operations and maintenance is to deal with all matters pertaining to operating, car service, transportation, equipment, telephone and telegraph, signaling, maintenance and construction engineering, mechanical, purchases and stores, inspection, freight claims, and such other matters of a related nature as may require attention or referred to it by the president.

Prior to his election as president of the American Railway Association in 1933, Mr. Gormley on August 15, 1921, was appointed chairman of the Car Service Division and in November, 1929, was elected also executive vice-president of that Association.

Mr. Gormley was born on a farm near Watertown, Wis. He entered service of the Chicago & North Western in 1893 as a clerk and laborer in the maintenance of way department, and for the following four years engaged in various capacities in the maintenance of way and building departments of that road. In 1897 he was appointed stenographer to division superintendent at Boone, Ia., and in 1899 appointed secretary to the general superintendent at Chicago. Later Mr. Gormley served as chief clerk and trainmaster. Subsequently he was appointed assistant to the vice-president and later assistant to the president. In 1917 Mr. Gormley was appointed general agent for the American Railway Association at military headquarters at Chicago in charge of the handling of troops and military supplies in the central territory. At the time of the institution of federal control of railroads, he was appointed operating assistant to the regional director of the Western Region and later, when the Western Region was divided into three sections, appointed assistant regional director of the Northwestern Region. At the conclusion of federal control Mr. Gormley was appointed director of the Division of Transportation of the American Petroleum Institute, which position he filled from March 1, 1920, to August 1, 1921, when he resigned to become connected with the American Railway Association.

Mr. Downes has been connected with the Pennsylvania in various capacities since 1901. Mr. Downes



M. J. Gormley

James R. Downes

Harold J. Forster

Fairman R. Dick

was born in Tyrone, on October 23, 1883. After receiving a high school education, he became a clerk in 1901 in the office of the division superintendent of the Pennsylvania, in which capacity he served five years. From 1906-18, he served as clerk in the general manager's office and from 1918-20 he was chief clerk to the regional director, United States Railroad Administration. Mr. Downes, in 1920, was appointed chief clerk to the vice-president, central region, and continued in that position for three years, when he became superintendent of freight transportation. He was appointed chief of transportation in 1928. Later he was appointed assistant vice-president.

Mr. Forster entered railroad service in 1906 with the United States Express Company, but became connected with the American Railway Association in 1907 as a stenographer, serving subsequently as chief clerk, assistant treasurer, and assistant general secretary, which position he held when elected secretary and treasurer in 1924.

Fairman R. Dick was born in Philadelphia, Pa., on August 7, 1885. He was educated at St. Paul's School, Concord, N. H., and Harvard College from which latter institution he received an A. B. degree in 1907. He went immediately into the investment bond business in New York and has been engaged in it ever since—being a partner of Roosevelt & Son until recently when he went with the new partnership of Dick & Merle-Smith. He is a recognized authority on railway finance and a director of the Boston & Maine and Milwaukee railroads.

Eastman Halts Change In Chicago-Florida Trains

(*Continued from page 552*)

passengers were eliminated. It also appears that the Chicago & Eastern Illinois is in a position to retain the mail and express on its line, if it continues to operate these trains. The Chicago & Eastern Illinois is further of the opinion, and with reason, that the operation of these trains is necessary to prevent erosion of its freight traffic from the loss of prestige which would follow their abandonment. If the Chicago & Eastern Illinois continues the service and offers cars to the Louisville & Nashville at Evansville with reasonable loads, the Louisville & Nashville would be forced to accept them, provided normal customs in railroad operation are followed. In this event, it would continue to have some share in the through passenger business.

The chief reason advanced by the Louisville & Nashville for the establishment of the new service is that the "Dixie" route has steadily lost in the proportion of available passenger traffic. It is claimed that in 1925 the Florida passenger traffic from the territory affected was participated in by the "Dixie" trains and those of the principal competitor in the proportion of 60 per cent to the former and 40 per cent to the latter, whereas in 1933 these percentages were reversed, the "Dixie" trains handling only 40 per cent. It is also said to be a fact that the "Dixie" route has lost relatively in volume of passenger traffic to and from Florida to routes operating through Cincinnati, the final result being that the "Dixie" route has lost its former pre-eminence. This is owing, it is claimed, to the lack of effective solicitation by the Chicago & Eastern Illinois, and it is hoped to remedy the situation by an alliance with a strong, far-flung system like the New York Central.

Revenues of Chicago-Florida Trains

Eight limited passenger trains are operated between Chicago and Florida, two via the Chicago & Eastern Illinois and Evansville, two via the Illinois Central and Birmingham, two via the New York Central and Cincinnati, and two via the Pennsylvania and Cincinnati. In point of time they all furnish equally good service. The Co-ordinator's Section of Transportation Service has returns from questionnaires sent to the carriers which show, among other things, the revenue from tickets sold in 1933 by various lines from Chicago to southern points. The revenues to points in Alabama, Georgia, and Florida were as follows:

Chicago & Eastern Illinois	$220,309
Illinois Central	213,144
Pennsylvania	59,416
New York Central	51,544

The revenues to Florida points alone were as follows:

Illinois Central	$180,539
Chicago & Eastern Illinois	140,397
Pennsylvania	53,937
New York Central	37,541

These figures do not indicate any superiority in solicitation on the part of the New York Central, as compared with the Chicago & Eastern Illinois, notwithstanding that the opportunities for service over its route through Cincinnati are as good as, if not better than, those over the route of the Chicago & Eastern Illinois through Evansville, and decidedly better than those over its own route through Evansville. The figures do indicate that on Florida business alone, the latter is not making as good a showing as the Illinois Central; but many circumstances, apart from solicitation, may have entered into this. The average earnings of the two Chicago & Eastern Illinois-Louisville & Nashville trains, north of Albany, Ga., were $1.73 per train mile, whereas the similar earnings of the two Illinois Central trains north of Albany, were $1.41 per train mile. At Albany the trains of both routes are combined. The revenues received by all carriers in 1933 from passengers terminated by the Atlantic Coast Line and Florida East Coast railroads was $143,245, in the case of passengers originated at all stations of the small Chicago & Eastern Illinois system and moving through Evansville (all of which traffic was handled by the Louisville & Nashville), and $186,002, in the case of passengers originated at all stations of the great New York Central System and moving through Cincinnati (only a part of which was handled by the Louisville & Nashville).

It does not appear that, prior to the letter of September 25, the management of the Louisville & Nashville communicated its dissatisfaction with respect to solicitation to the management of the Chicago & Eastern Illinois.

Exhibit B contains allegations of the New York Central and the Louisville & Nashville with respect to the inability of the Chicago & Eastern Illinois to secure proper equipment from the Pullman Company. The staff of the Co-ordinator has, however, checked this allegation with the Pullman Company and finds it to be without foundation.

The proposed change will require the New York Central to operate between Chicago and Evansville three new limited passenger trains. At present only one such train is operated, and in 1933 its earnings were only 66 cents per train mile. Doubtless one of the new trains will take the place of this present train.

The facts before the Co-ordinator indicate clearly that the proposed change will result in a duplication of services, inasmuch as the same train service as now operated will be retained on the Chicago & Eastern Illinois and new and additional trains will be operated by the New York Central. Traffic conditions, also, clearly make such duplication of services unnecessary. The facts further indicate that if the new service is to be operated over the New York Central line with safety, comfort, or convenience to the public equal to that which is afforded by the Chicago & Eastern Illinois line, substantial additional expenditures will be necessary for improvements and maintenance. Under present traffic conditions, such expenditures will constitute wastes and preventable expense.

In these circumstances and with the information now in his possession, the Co-ordinator finds it necessary to issue an order in furtherance of the purposes of Title I of the Emergency Railroad Transportation Act, 1933, and for the protection of the public interest. It is plain, however, that there has not been an opportunity for a complete development of all of the facts in regard to this matter. It is a situation where a public hearing is much to be desired. If, therefore, a petition is filed with the Interstate Commerce Commission for a review of this order, the Co-ordinator will not oppose, but on the contrary will favor, such review, in order that all interested parties may have full opportunity to be heard, both on facts and on issues of law, and in order that the Commission may have an opportunity to pass judicially on these matters.

Trustee Thomson had also protested against any recommendation by the co-ordinating committees formulated by them at an executive session in which the presidents of the interested parties, the N. Y. C. and the L. & N., were present, participating as members of the committees in the discussions and the vote by which the conclusions were reached.

NEWS

Eastman Investigates Sale and Handling of Scrap

Purpose is to develop information on costs and possibilities for economies

On October 26, 1934, the Federal Coordinator of Transportation addressed to the railroads an inquiry prepared by his Section of Purchases concerning the handling and sale of scrap. The purpose is to develop information on: (1) The costs of handling and preparing scrap for the market and the net revenue accruing to the railroads through the sale of scrap; (2) the advantages and disadvantages of dismantling equipment versus sale "on wheels," or dismantling by outside agencies; (3) the possibilities for economy through the establishment of central scrap plants to serve two or more roads, and (4) the relative position of the railroads as scrap producers.

"Estimates of the total tonnage of scrap produced annually by the railroads vary from 3,000,000 to 4,500,000," he said. "It originates in the form of miscellaneous parts and worn out and obsolete equipment. Some of it, such as rail, wheels, axles, bridge material, etc., is shipped direct from point of origin, while the rest is collected at scrap sorting plants, where it is sorted and prepared before shipment. Scrap equipment is sold 'on wheels,' dismantled, or sold under one of a variety of agreements whereby the purchaser returns parts, holds parts for re-purchase, etc. In some instances the dismantling work is done under contract, the road retaining the resulting scrap and usable parts."

The inquiry will develop information on the total amount of scrap originated by the railroads for the five years, 1929 to 1933; the amount shipped direct from point of origin and the amount handled through scrap sorting plants, for both ferrous scrap and non-ferrous metal scrap. The amount of each class of prepared scrap shipped during 1933 and the market into which it moved will be determined, together with the money received for the scrap. Because of the effect of freight haul on price, the ton-miles of haul, both free and revenue, and the freight revenue received are given due place in the inquiry.

The number of locomotives and cars dismantled, sold "on wheels" and sold under other agreements, together with total weight, terms of sale and money received, is also requested.

"There is wide variation in what meager information is at present available on the cost of scrap plant and dismantling operations," Mr. Eastman also said. "The inquiry contains well defined questions dealing with those items which will secure figures on the individual features of cost and will develop comparable figures. From the returns as a whole, it will be possible to place before the railroads a more complete and authoritative picture of their scrap handling operations than has ever been available, and one which will provide the basis for a concerted attack on many problems, the solution of which should result in improved efficiency."

Details, such as locations of scrap plants, size, capacity, facilities used, and kind of operations performed in each, will also be covered by the inquiry.

Streamlining the Railroads

The transcontinental dash of the Union Pacific's new streamlined train has implications which should not be lost sight of in the fanfare accompanying its record-breaking performance. It points two morals which the country may well ponder.

First, and most important, is the bearing it has on a sound course to be followed in public works. The Administration has shown no disposition to abandon public works, as a spending avenue. If that course is to be pursued, why not put more emphasis on grade crossing elimination?

To make the use of high speed trains generally practicable, grade crossings gradually must be done away with. At the close of 1930, there were more than 240,000 highway railroad crossings in this country. A program calculated to cut them out on some of the major lines would tie the expenditure of public funds directly to the stimulation of private enterprise. . . .

The second moral is . . . that railroad equipment buying offers one of the broadest highways for putting men back to work in the durable goods industries. The need for speed in railroad transportation of both freight and passengers is going to force the carriers to buy new equipment. They haven't the money to buy now, and the question of collateral for Government loans for purchases is a temporary barrier. The Government need not permit that barrier to remain insurmountable.

From the Wall Street Journal.

Harriman Appointed Administrative Officer of N.R.A.

W. A. Harriman, chairman of the board of the Union Pacific, has been appointed administrative officer in the National Recovery Administration.

Drop "Police Court" Status of Railways, Says Harrison

Declares "blue laws" have brought the carriers to the verge of bankruptcy

Milton W. Harrison, president of the Security Owners Association, in a recent address before the Metropolitan Traffic Association of New York, called for an abandonment of the "police court" status of rail carriers and suggested the immediate formulation of a national transportation policy to deal with the present crisis. He declared that restrictions of rail "blue laws," plus the cumbersome machinery of government regulation, has brought the railroads to the verge of bankruptcy.

"In the years since 1906," Mr. Harrison said, "when the Hepburn Act was passed, regulation of the carriers has grown so that today a railroad president scarcely dares call his soul his own without consulting the Interstate Commerce Commission. It has grown to occupy the complete attention of a commission of eleven members, a staff of more than sixteen hundred persons, and an annual expenditure of more than ten million dollars.

"The railroads may 'bleed to death' financially, as they are doing at the present time, but the doctor will not arrive, no matter how serious the emergency, until many months, possibly, after the crisis."

Experience of business under the N.R.A., Mr. Harrison declared, had demonstrated the necessity of "restoring to management the power to manage," and the reforms needed "to break the shackles which bind the nation's greatest industry." These he listed as:

1. Establishment of unified systems of transportation, including highways, waterways and rail, to bring about reduction in overhead expense of the present 143 Class I railroads, the hundreds of short lines and thousands of other transportation units.
2. Reorganization of the Interstate Commerce Commission which, uninterfered with by Congress, would accept complete, instead of present partial, responsibility for maintenance of transportation on a sound economic basis.
3. Restoration of initiative to railroad management as a step in bringing about reduced expenses and early unification.
4. Revision of procedure, to reduce time and expense, in railroad reorganizations, and provision of financial aid during "transition" period.

Freight Claims Settled in 30 Days

During the first six months of 1934, railroads of the United States settled 103,681, or 77 per cent, of their freight claims, which totaled 134,627, in 30 days. At the same time, 20,487, or 15.2 per cent of the claims were paid, declined or withdrawn between 30 and 90 days, and 10,549, or 7.8 per cent were settled after 90 days.

Beatty in Colloquy with C. P. Fullerton on Merger

C. P. R. head reiterates claim of 75 million savings in joint operation with C. N. R.

Citing accumulated deficits of the Canadian National of $644,000,000 since 1923, E. W. Beatty, chairman and president of the Canadian Pacific, on October 25 vigorously replied to recent speeches delivered in Halifax, N. S., and St. John, N. B., by Judge C. P. Fullerton, chairman of trustees, of the Canadian National, in opposition to the amalgamation of Canada's two large railways, which Mr. Beatty favors.

"Those who favor a permanent solution of the railway problem calculated to relieve the country of the millstone of the Canadian National deficits will be the first to welcome a free and frank discussion of the whole subject," Mr. Beatty's statement read in part. "If those now in charge of the Canadian National have views as to the future of our railway systems, it is better that they should be openly stated, rather than reflected in anonymous statements bearing the impress of inspiration. However, it is unfortunate that Mr. Fullerton, in stating his opinions, should endeavor to minimize the disastrous effects of those recurring deficits, and that he should proceed on the assumption that the country will be satisfied with the threadbare assurance that time and tide in some mysterious way will convert a crushing liability into an asset.

"In reply to those who advocate unification, he does suggest that all the economies possible under plans proposed could be accomplished through co-operation. Such a statement is palpably absurd, unless it is assumed that no substantial economies will be permitted under either system. In order to achieve economies through co-operation the officers of two competing properties must not only reach agreement about each and every thing that is done directly, which, because of competitive conditions, is difficult enough, but must also endeavor to deal fairly with the indirect effect upon the exclusive interests of the companies. These exclusive interests are diverse and of such importance that there is often a possibility of one company or the other losing more from the indirect effect on these exclusive interests than its proportion of the direct savings from co-operative action.

"Mr. Fullerton stated that when I estimated that $75,000,000 could be saved from amalgamation I spoke not from my own knowledge but from what my officers told me, and goes on to say that he found it difficult to determine what the saving would be, but that his own officers had told him it would not be more than $15,000,000. The estimate of $75,000,000 was, naturally, initially prepared by a committee of officers. It was later verified by independent experts and was thoroughly reviewed by myself prior to my giving extensive evidence in regard to the method followed and the details of saving. In computing the saving the year 1930 was taken as a basis, because that was the latest year for which the complete operating results were available, at the time when the Royal Commission asked for the submission. As it happens it was an admirable year on which to base a study of that kind. The earnings that year struck an average between the years of expansion culminating in the peak of 1928, and the years of extreme depression which, we hope, ended with 1933.

"While Sir Henry Thornton opposed amalgamation, in his evidence before the Royal Commission he testified that $60,000,000 could be saved by amalgamation. It will be seen, therefore, that there was no substantial difference of opinion at the time the Royal Commission was taking evidence as to the approximate savings to be effected through unification, and there has been no change in conditions since which would materially alter the conclusions reached at that time as to the average savings which could be accomplished.

"Mr. Fullerton asserts that the Canadian Pacific is in precisely the same position as the Canadian National in that it was compelled to go to the Government for assistance. I hope that he is not trying to be humorous in discussing a matter of such gravity. The Canadian Pacific is not costing the Government of Canada one cent, but is one of the largest contributors to the public exchequer. The National Railways since 1923 have accumulated deficits of $644,000,000 and are still costing over $90,000,000 per year.

"Another observation of the chairman is illuminating. He states that he does not believe there will be an absence of political influence if unification were adopted, and he adds in the next breath that there is no political influence now. I do not know how he can reconcile two such contradictory statements in practically the same sentence. How many times was it stated during the years prior to 1932 that there was no political influence being exerted, yet when the late President gave evidence before the Royal Commission he frankly admitted that the Canadian National Railways were not divorced from politics.

"On this very point, the public will be quick to realize the significance of the remark made by Mr. Fullerton at St. John to the effect that meetings of employees to discuss amalgamation had been called at Winnipeg, Toronto and Moncton. None would question the propriety of railway employees discussing a matter which so closely affects their interests. But one may be excused for questioning the spontaneity of the movement, and for suspecting an effort to induce employees to give a demonstration of their political strength."

Buyers' Addresses Painted on Hogs

Hogs in lots of one or more and with the buyers' addresses painted on them are being shipped to market from a test territory in Kansas under a plan put in effect by the Atchison, Topeka & Santa Fe, whereby small shippers may secure the carload rates. Under this plan, stock cars leave Superior, Neb., on a local freight train every Monday to pick up hogs for shipment to Kansas City, Kan., and for Wichita. A shipper is privileged to send one or more hogs at the carload rate, with the proviso that the total number of hogs picked up along the line shall equal or exceed the carload minimum.

Railroad Retirement Board Enjoined by Court Decree

Prevented from issuing any orders on railroads calling for funds or information

Chief Justice A. A. Wheat of the supreme court of the District of Columbia, following his decision of October 24 holding the railroad retirement act unconstitutional, on October 30 issued his decree enjoining the Railroad Retirement Board from issuing any orders under the act calling on the railroads for contributions of funds or for information. The decree was issued following a brief hearing at which counsel for the board had asked the court to stay the issuance of a permanent injunction pending an appeal from the decision to the higher courts. The Attorney General had announced that an appeal would be taken, saying it was important that the Supreme Court of the United States pass upon the act as soon as possible, not only for the particular purpose of this act but also to determine the scope to which any such acts can go. After the court had announced that an injunction would be issued counsel asked if he could not make provision so that the board could call on the railroads for certain information, including service records. Justice Wheat said that he could make no exception consistent with his decision but at a conference of counsel for the board and the railroads it was agreed that the roads would co-operate with the board to a reasonable extent in furnishing information without an order. The decision meant, however, that the roads would not have to make the quarterly payment of approximately $15,000,000 on November 1. One small road, the Fort Smith & Western, had already applied to the Reconstruction Finance Corporation for a loan to pay its contribution.

There was some question as to whether the government's appeal could be taken direct to the Supreme Court or whether it would be necessary first to apply to the court of appeals of the District of Columbia. Meanwhile Co-ordinator Eastman is expected to proceed with his study of the basic information needed on which to predicate a pension system and of the principles involved for the purpose of a report to Congress and the President but it is not expected that efforts will be made to pass new legislation on the subject until after the highest court has rendered its decision.

In response to inquiries, the Railroad Retirement Board has announced that it will not cease to function while the question of the validity of the Act is pending before the appellate courts. So far as the limited funds at its disposal will permit the board will continue to receive formal applications for annuities, to carry on correspondence concerning the applications and other matters relating to the operation of the board and the railroad retirement act. Applications will be checked and prepared for verification from carriers' records.

The board has a small staff which will,

as hitherto, assist the board in planning the set-up of accounts, in preparing forms on which reports will be made and data furnished; in preparing forms on which contributors may nominate beneficiaries to receive their contributions upon death; in planning systems of filing and indexing; in planning methods of claim investigation, auditing and verifying contributions and in planning the other many functions which the board must perform. Rules, regulations and explanations will be drafted by the board; continued study will be given to the scope of the act as to carriers and particularly as to electric lines. The personnel requirements needed to carry on the board's work will be analyzed in detail and preparations made for securing employees if and when that becomes possible.

"The Retirement Board feels," it said, "that some recent reports in the press may have given an erroneous impression concerning the railroad retirement act. The subject of pension and retirement legislation applicable to railroads was under consideration in Congress for some time prior to the passage of the railroad retirement act, the first bill dealing with the question having been introduced more than three years prior to the final enactment of the law. Extensive hearings on railroad pension legislation were held before a Senate committee in January, 1933, and there were hearings before both Senate and House committees in 1934.

"The bill as finally enacted contained many modifications of original proposals and sought to take advantage of suggestions which were made toward the improvement of the legislation.

"After three months' experience with the act, the board has found it to be, in its essential features, sound, workable and practicable. Regulations of the board, promulgated pursuant to the provisions of the act, have dispelled doubts that otherwise might have existed, and have provided for a smooth administration. While the board may later offer suggestions for amendments, these would be such as would arise under actual experience with any legislation involving so broad a field and so comprehensive a system.

"The Board regards it as significant that in the action brought by the carriers, there is very little dispute as to the proper interpretation of the act."

The Railroad Retirement Board has addressed circular letters dated October 29 to employees reported to it by the railroads as reaching the age of 70 by February 1, 1935, informing them that under the law, unless they are officials, they may not work for pay for a carrier after January 31, 1935, and enclosing blanks on which applications may be filed for pension annuities. The letter says the board has ruled that retirement need not take place before February 1.

R. C. C. Authorizes Another Distribution

The Railroad Credit Corporation has been authorized by the board of directors to make another liquidating distribution of one per cent to participating carriers as of October 31. This distribution will amount to $723,780.97, of which $337,310.59 will be in cash and $386,470.38 will be in credits. This is the eleventh distribution that has been made by the Railroad Credit Corporation. With the liquidating distribution now announced, the corporation has authorized distributions amounting to $18,419,797, or 25 per cent of the pooled emergency freight charges since it began liquidating on June 1, 1933. Of this amount, $8,034,733 is cash and $10,385,064, credits.

Club Meeting

The Central Railway Club of Buffalo (N. Y.) will hold its next meeting at the Statler Hotel, Buffalo, on Thursday evening, November 8. This will be "mechanical night," and the speaker will be Samuel L. Vauclain, of the Baldwin Locomotive Works. His subject will be "Streamlined Locomotives and Trains—Steam or Oil-Electric?"

New England Air Lines Reduce Fares

The Boston-Maine Airways and the Central Vermont Airways announce that on both of these lines—Boston-Portland-Bangor and Boston-Concord-White River Junction—round-trip fares have been materially reduced. The increase in travel during the past summer has been encouraging. From Burlington, Vt., northward, however, the airplane service will be suspended during the winter months, because the airport is too far from the city.

The new round-trip rate between Boston and Portland will be $8.10, as compared with $9.50 heretofore, and for other journeys in proportion. The round-trip rate between Boston and Manchester, N. H., will be $4.50 instead of $6; Boston and Burlington $17.20 compared with $22.

Passenger Rate Hearing Postponed

The Interstate Commerce Commission has announced a postponement to January 16 of the hearing scheduled for November 16 at Washington before Commissioner Porter in connection with its general investigation of passenger fares. The reasons given were that the hearing scheduled would conflict with that at Chicago in the general rate advance and the uncertainty as to whether passenger data now being assembled by Co-ordinator Eastman would be available.

The commission has also reassigned the hearing in the rate advance case before Commissioner Mahaffie which was to have been held at Dallas, Tex., on November 7 so that it will be held at Fort Worth instead.

Employees' Representatives Chosen on S. P. & S.

Following an election of the shop and maintenance of way employees of the Spokane, Portland & Seattle, the National Mediation Board has issued a certification that the Railway Employees' Department of the American Federation of Labor has been duly designated and authorized to represent the crafts of machinists, boilermakers, blacksmiths, sheet metal workers, firemen and oilers, and their helpers and apprentices; that the Brotherhood of Maintenance of Way Employees has been designated to represent the water service mechanics and helpers, and that the Associated Organizations of Shop Craft Employees, Great Northern Railway, has been designated to represent the crafts of electrical workers, carmen, and their helpers and apprentices.

Federal Relief Shipments for One Year 146,977 Cars

The Federal Surplus Relief Corporation provided 146,977 carloads of revenue freight for the railroads of the country in the year ended September 30, it was announced by Harry L. Hopkins, administrator of the Federal Emergency Relief Administration, and president of the corporation. The livestock, foodstuffs, and other commodities shipped by the FSRC to state relief administrations for distribution to the needy unemployed, if shipped at one time, would have required a movement of 2,935 trains of 50 freight cars each. The total of 146,977 cars is in excess of all the freight cars loaded by all the railroads in the United States on any day in the week ending October 13 and it was pointed out that this government freight movement provided work for approximately 3,000 train crews for various lengths of time, according to the haul.

Court Orders $32,500 Be Paid to C. S. & St. L.

The superior court of Los Angeles, Cal., on October 25, ordered W. W. Widenham, formerly solicitor of subscribers for the Chicago, Springfield & St. Louis when it was being reorganized in 1925, to pay $32,500 to the railroad at principal and interest unpaid on a stock subscription. Mr. Widenham contended that he subscribed $20,500 with the understanding that the subscriptions he obtained would cancel his own. Shortly after this alleged agreement, he was discharged as solicitor of subscribers, making it impossible for him to carry out the agreement. The Los Angeles court ruled that Mr. Widenham should pay $20,500 as the principal and $12,000 interest, holding that a secret agreement with one stockholder to escape paying a subscription is void as against the remaining stockholders who had no knowledge of the agreement.

German Railroads Increase Speed

Increases in the general speed of passenger trains of the German National Railroads Company are included in the 1935 schedule of the system. Eight new streamlined flyers will be the most important improvement in the speed of the system's train service. These new trains will be fashioned, in principle, after the "Flying Hamburger," which has been on scheduled service between Berlin and Hamburg since May, 1933. The runs on which these new "Schnelltriebwagen" will be operated are Berlin-Cologne, Hamburg-Cologne, Berlin-Munich, Nuremberg-Stuttgart, Berlin-Leipzig, Berlin-Dresden, Berlin-Breslau-Beuthen and Berlin-Koenigsberg. On most other runs, trains will be speeded up to a considerable extent. Faster connections on the routes Warsaw-Breslau-Dresden - Nuremberg-Stuttgart-Strassburg and Paris, as well as Stuttgart-Zurich-Genoa, have been mapped out. Further improvements are provided for in train times on the runs

Berlin-Munich and Berlin-Stuttgart, Berlin-East Prussia, Hamburg-Leipzig, Dresden-Wuerzberg-Saaw and Rhineland, Vienna-Passau - Rhineland - Holland - Belgium, Holland-Switzerland and many other intra-German and international connections.

International Acetylene Association to Meet at Pittsburgh

The thirty-fifth annual meeting of the International Acetylene Association will be held at the William Penn Hotel, Pittsburgh, Pa., on November 14, 15 and 16. Of special interest to railroad men will be the papers to be presented at the sessions on Friday, November 16, dealing with transportation and with education and safety in welding. The papers in the transportation group, which will be presented in the morning, include the following: Construction of Transportation Vehicles by Welding, by G. O. Hoglund, supervisor of welding, Aluminum Company of America, New Kensington, Pa.; Maintenance of Railroad Rolling Stock, by D. C. Reid, general superintendent of motive power, Boston & Maine; Track Welding, by George M. O'Rourke, district engineer, Illinois Central; and Oxy-Acetylene Process in Railway Maintenance of Way Work, by C. H. R. Howe, cost engineer, Chesapeake & Ohio.

Southern Continues to Merchandise Low Passenger Rates

That the Southern is continuing an aggressive merchandising of its low passenger fares is indicated by the attention-arresting display with which these fares are advertised in the road's latest folder showing condensed schedules of its through trains between New York, Philadelphia, Baltimore, Washington and the South. Prospective patrons are again reminded that they may "Travel anywhere—any day on the Southern for 1½ cents per mile." After this prominent display of the one-way coach fare comes a listing of all Southern reduced fares under the caption "A fare for every purpose!"

The folder, as stated at the outset, shows condensed through schedules of some of the Southern's trains. Among these are the Piedmont Limited; the New York-Washington-New Orleans Express; the Memphis Special, and the Birmingham Special. A similar folder has been issued to show through schedules of Southern services between the Middle West and Florida, the Carolinas and New Orleans.

Equipment On Order

Class I railroads on October 1 had 5,495 new freight cars on order, according to reports compiled by the Association of American Railroads. On the same day last year 275 new freight cars were on order and on the same date two years ago, there were 1,275. The railroads on October 1 this year also had 37 new steam locomotives on order and 104 electric locomotives. New steam locomotives on order on October 1, 1933, totaled one, and on the same date in 1932, there were four.

In the first nine months of 1934, the railroads installed 19,107 new freight cars. In the same period last year, 1,872 new cars were placed in service and for the same period two years ago, the total number installed was 2,679. Fourteen new steam locomotives and 12 new electric locomotives were placed in service in the first nine months this year. The railroads in the first nine months of 1933 installed one new steam locomotive and 36 in the corresponding period in 1932.

Freight cars and locomotives leased or otherwise acquired are not included in the above figures.

Ontario Premier Heads Province's Railway

The Temiskaming & Northern Ontario, provincial government line which has been under fire by Ontario's new Liberal government, will be operated temporarily by a commission of five members headed by Premier Mitchell Hepburn.

Premier Hepburn announced at Toronto at the end of a Cabinet meeting last week that all five members of the new commission will serve without pay pending reorganization of the staff of the road.

The commission includes: Armand Racine, Windsor, Ont., lawyer who conducted the investigation into affairs of the railway; Arthur G. Slaght, Toronto lawyer and prominent Ontario Liberal; Mayor Charles Gallagher, of Schumacker, Ont., an engineer and land surveyor; Col. Malcolm Lang of Haileybury, Ont., former member of the Ontario Legislature.

The Premier said he and Mr. Slaght would resign as soon as reorganization of the road was completed. The chief problem, he said, was to find a general manager to succeed George W. Lee, former chairman of the commission and general manager.

I.C.C. to Reconsider Barge and Rail Rates and Differentials

Acting on a petition filed by the railroads in September the Interstate Commerce Commission on October 31 announced a re-opening for further hearing of many of the cases in which it has prescribed joint rates and through routes via barge lines operating on the Mississippi and Warrior Rivers and their tributaries and the institution of a proceeding of investigation on the commission's own motion into the subject of the routes, rates, and differentials prescribed. The railroads had taken the position that the routes, rates, and differentials had been fixed without adequate, comprehensive or complete records and that the time had come for a complete reconsideration on an adequate record. As stated in the commission's order the investigation is to be into and concerning the reasonableness and lawfulness otherwise of existing through routes and joint rates, rules, regulations, and practices for application by common carriers by railroad and by common carriers by water operating upon the Mississippi and Warrior Rivers and their tributaries; the reasonableness of existing minimum differentials between all-rail rates and corresponding rail-barge, barge-rail, and rail-barge-rail rates; the necessity, if any, for the establishment by the aforesaid common carriers by railroad and by water of additional through routes and joint rates, rules, regulations, and practices; and for the fixing of reasonable minimum differentials if any, between the corresponding all-rail rates and any such additional through routes and joint rates; with the view to making such findings in the premises and prescribing such just, reasonable, and otherwise lawful joint rates, rules, regulations, and practices and such reasonable minimum differentials, if any, as the facts and circumstances shall appear to require.

A. R. E. A. Submits Plans for Standard Tie Plates

The American Railway Engineering Association has submitted to its members a letter ballot on plans for standard tie plates. These plates are 7½ in. wide, have double shoulders, a cant of 1:40, rolled crowns and are designed with an eccentricity of ¼ in. Two designs are submitted for use with the 112-lb. RE rail section and two for the 131-lb. RE rail section, both of which sections were adopted last year. For 112-lb. rail, one of the tie plates submitted is 11 in. long, with inclined ends and with square holes for cut "hold-down" spikes, while the other design is 12½ in. long with flat ends and with round holes for screw "hold-down" spikes. For 131-lb. rail, one design is 12 in. long with inclined ends and with square holes for cut "hold-down" spikes, while the other is 13 in. long with flat ends and with round holes for screw "hold-down" spikes. The bottoms of the tie plate sections with flat ends are flat, while those with inclined ends have two transverse ribs.

Ballots are to be returned to E. H. Fritch, secretary, not later than November 15.

Automobile Pushed in Front of Train

About all of the possible causes of death or injury in railroad train service can be found, no doubt, in the files of the Interstate Commerce Commission, in the course of the thirty odd years that the Bureau of Safety has kept these records; but the thirty-fourth year is marked by a cause believed to be absolutely unprecedented; an automobile pushed in front of a fast train by the act, or neglect, of the driver of another car; and five persons were killed.

This was at Vermontville, Mich., on the last, about 7:20 p. m. Following is an Michigan Central, on the tenth of August abstract of the Bureau's report:

Westbound passenger train No. 109, moving at 50 or 60 miles an hour, struck an automobile at a crossing, and after running about 1000 ft. to a frog, was thrown off the track and the locomotive fell down a bank and was overturned. Four persons in the automobile and one trespasser were killed, and five passengers, two employees and one trespasser were injured. The automobile which was struck by the train was a Pontiac sedan, in which were four persons. It was stopped just south of the crossing, waiting for the train to pass, and it was struck in the rear by a following car, a Chevrolet, operated by George H. Swift, and was pushed forward about 17 ft. to the track and lodged immediately

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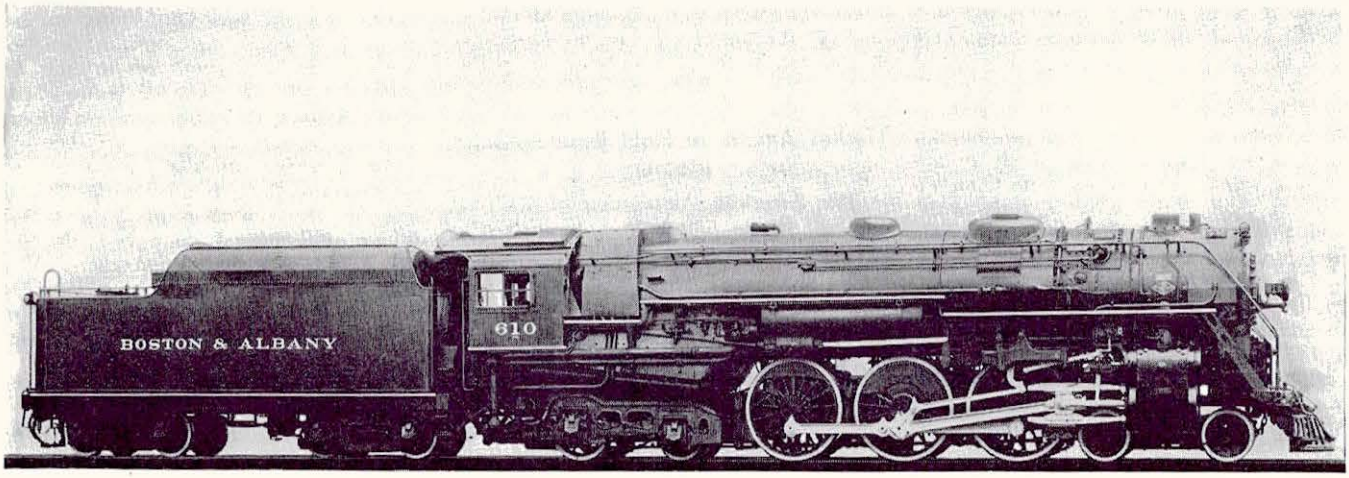
S T E A M



WILL PROVIDE ANY TRAIN SPEED YOU CAN USE

Modern Super-Power Steam Locomotives remove the limitation of speed due to motive power, and safely permit any train speed made possible by other operating characteristics.

With high speed the steam locomotive also combines flexibility of safety train operation, comfort, and low cost.

Without introducing any unproven elements the Super-Power Steam locomotive alone provides all requirements of high speed passenger service.

LIMA LOCOMOTIVE WORKS INCORPORATED
LIMA OHIO

in front of the locomotive; and its wreckage was carried on the pilot of the engine 1000 ft. to the frog before mentioned. The trespasser killed was riding on the back end of the tender. Other trespassers so riding gave the principal testimony as to the circumstances. The engineman and fireman were injured so that they were not interrogated.

Swift, 23 years old, owner of the Chevrolet, said that he was a farm hand, and, with two companions, was traveling northward at about 10 miles an hour, with the headlights of his car burning dimly. He said he did not see the automobile ahead (standing near the center of the road) until he was within 3 ft. of it. The Pontiac, according to his word, had no tail light. The crossing signals, both an approach signal with reflex letters and a flashing light signal, were in good order, and the proper whistle and bell signals were sounded on the locomotive.

The inspector holds that Swift was guilty of gross carelessness, whether the standing car did or did not have a tail light. He was familiar with the crossing, and the brakes on his car were in good condition. His speed must have been considerably higher than stated by him; and, says the report, had he not struck the standing car, his own car would have run upon the crossing, directly in front of the approaching train.

Tank Car Service Asks Approval of Emergency Cost Schedule

The code authority for the tank car service industry has asked the National Industrial Recovery Board to approve its findings that destructive price cutting has caused an emergency in the industry; and has submitted a proposed schedule of lowest reasonable costs for tank car services. The code authority's proposals and any suggested modifications of the code section governing minimum costs in time of emergency will be discussed at a public hearing on November 5 at the Willard Hotel, Washington.

The schedule establishes minimum charges according to the type of car demanded, ranging from $1.30 to $2.35 on a daily lease basis and from $26 to $43.50 monthly. Under code provisions, the code authority is empowered to determine that an emergency exists and to fix the minimum rental charges for the use of tank cars on specified rental bases. The National Industrial Recovery Board may approve, disapprove or modify the determinations of the code authority.

Motor Transport and Maintenance Meeting at Newark, N. J.

A three-day transportation and maintenance meeting sponsored jointly by the Metropolitan Section Society of Automotive Engineers, the New Jersey Motor Truck Association and the Newark Chamber of Commerce, will be held at the Hotel Douglas, Newark, N. J., on November 8-10. Among the subjects to be discussed are taxation, regulation and safety in motor vehicle operation, and the economical application of rates for movement of freight by trucks. Speakers will include Major R. F. Britton, director of the National Highway Users Conference; General H. B. Markham, director of the American Petroleum Institute; T. V. Rodgers, president of American Trucking Associations; Alfred Reeves, vice-president and general manager of the Automobile Manufacturers Association; and F. I. Hardy, industrial engineer, of Boston. F. C. Horner of the General Motors Corporation will be chairman of the session devoted to the discussion of highway transport taxation and regulation, while a representative of Federal Coordinator Joseph B. Eastman is expected to address the dinner meeting on November 8. Air transport will also be considered at some of the meeting's sessions.

Ticket Agents to Hold Business-Sales Meeting

The American Association of Railroad Ticket Agents will hold a business-sales meeting in San Antonio, Tex., on November 5 and 6. The meeting is designed to bring about an effective discussion of selling to promote sales efficiency. Among the subjects to be considered are Advertising and Its Reaction to the Public, Courtesy and Building Clientele by Personal Service, Salesmanship as Applied to All Employees Contacting the Public, Effect of Air-Conditioning Equipment in Returning Travel to the Rails, and Recommendations for the Improvement of Sales Efficiency on Railroads and Particularly in the Ticket Offices.

Following the two-day session, at which all traffic officers are urged to assist in discussion, members will tour Mexico for the purpose of securing first-hand information of that country. Post-convention tours have been employed in the past and their effectiveness has been demonstrated during the months following.

The itinerary of the Mexican tour includes Monterrey; Mexico City, side trips from Mexico City to Xochimilco and Cuernavaca and the Guadalupe Shrine; Orizaba and Guadalajara.

The Canadian Roads in September

Net operating revenue of the Canadian Pacific for September was $3,033,580, which compares with $3,003,328 in September of last year, an increase of $30,251. Gross revenues were $12,042,792, comparing with $11,173,335 in the corresponding month of 1933, an increase of $869,457, while operating expenses were $9,009,212, showing an increase of $839,206.

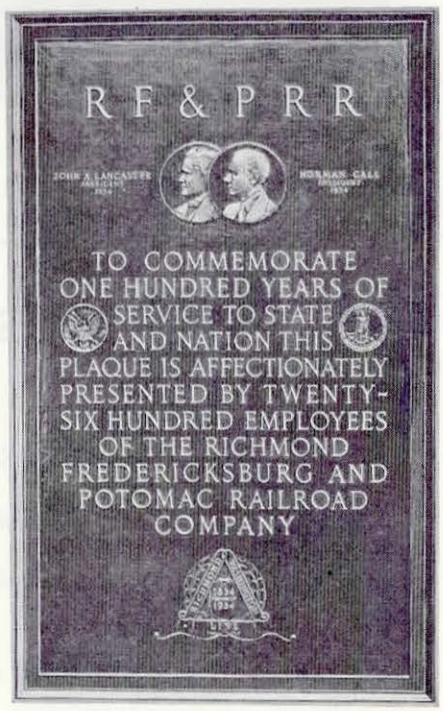
For the nine months ended with September, net was $13,670,107, which compares with $9,971,451 in the corresponding period of last year, an increase of $3,698,656. Gross for the period totaled $90,900,318, which contrasts with $81,982,529 for last year, an increase of $8,917,789. Operating expenses for the period were $77,230,211, comparing with $72,011,078 last year, an increase of $5,219,133.

The Canadian National had gross operating revenues of $14,940,269 in September, an increase of $858,212 over a year ago. This increase was more than offset by an increase of $906,825 in operating expenses, and net operating revenues of $2,010,244 show a reduction of $48,613 from the $2,058,858 reported a year ago. Operating expenses rose from $12,023,199 to $12,930,025.

Gross for the nine months ended with September were $121,962,709, an increase of $13,746,429, while the increase in expenses was held to $114,820,204 this year, comparing with $107,308,907 a year ago, the result being net operating revenues for the nine months of $7,142,505, compared with $907,373 a year ago, an increase of $6,235,133.

Celebration of R. F. & P. Centenary

The bronze plaque here illustrated is a unique testimonial (that explains itself) of American railroad employees to their employer, which was installed in the Broad Street Station, Richmond, Va., on Monday evening, October 22, in the presence of a large gathering attended by officers and employees of the railroad and their friends, and by the Governor of Virginia, the Mayor of Richmond, members of the State Corporation Commission and others. W. K. Saunders presided. Who originated the plan of presenting this memorial is not mentioned in the report, but the presentation was made by W. B. Robelen, a machinist in the company's shops. The speech of acceptance was by Norman Call, president of the company. Mr. Call, in a brief review, mentioned especially the "priceless comfort and inspiration" afforded, in these times of depression and unusual burdens, by the certain knowledge that the splendid morale of the company's personnel is undiminished and its courage unimpaired. The plaque was unveiled by Misses Lancaster and Call, grand-daughters of the first and the present presidents of the road.


R F & P R R
TO COMMEMORATE ONE HUNDRED YEARS OF SERVICE TO STATE AND NATION THIS PLAQUE IS AFFECTIONATELY PRESENTED BY TWENTY-SIX HUNDRED EMPLOYEES OF THE RICHMOND FREDERICKSBURG AND POTOMAC RAILROAD COMPANY

The Richmond, Fredricksburg & Potomac is one of the few American railroads which have continued for a century an uninterrupted life under the same title. Its charter was granted on February 25, 1834, and it was in February of this year that the movement for this celebration was begun. A brief sketch of the history of the road was published in the *Railway Age* of

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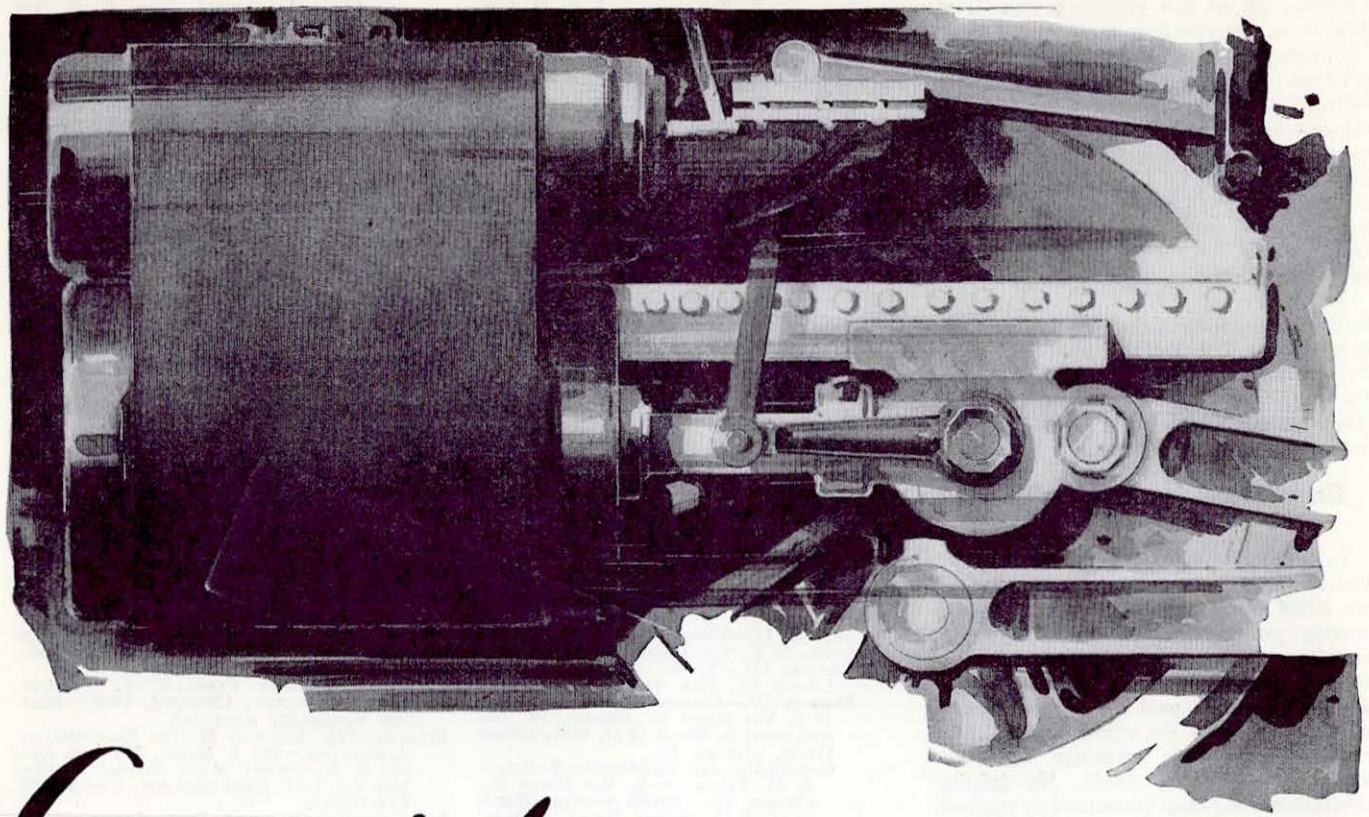


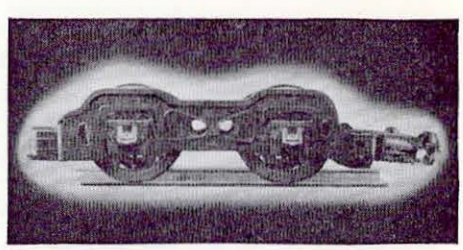
Consider The PISTON THRUST AND ITS EFFECT ON MAINTENANCE COSTS

Obviously the higher the piston thrust the larger the parts must be and the greater the cost for maintenance.

To provide the power needed for starting and for the hard pulls, which may be only 5% of the total time, the main cylinders and related parts must be made larger than are needed for the other 95%—unless the Booster is applied.

Utilization of the Booster permits main cylinders to be proportioned for average conditions over the run; the Booster providing the extra capacity for starting, on grades and for getting in and out of sidings.

Without sacrifice of ton-mile-per-hour capacity, the Booster enables utilization of smaller main cylinders with the resultant lower Piston Thrust and lowered maintenance on both locomotive and track and less capital expenditure.



The close tolerances essential to efficient Booster operation call for genuine repair parts made by Franklin.

FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK CHICAGO MONTREAL

February 24, of this year, page 286. The first train was operated in February, 1836.

Governor George C. Peery, in his speech, referred to the unusual individuality of this railroad company and said that, if all of the rest of our railroads had been as well managed as this one, there would have been no necessity for establishing an Interstate Commerce Commission; nor would there be need for a Securities Commission if all roads had been as well managed financially.

Mayor Payne, of Fredricksburg, and a large delegation from that city attended the ceremonies. The employees presented to President Call a 150-lb. birthday cake, and the road provided refreshments for the whole company of guests. The R. F. & P. negro singers provided music.

Grade Separation Program Under Consideration

In connection with plans of the administration for a new program of expenditures for relief work and public works for the coming year, on which various agencies and departments are making studies for the consideration of the President, considerable attention is being paid to the possibilities of a program for the elimination of railroad-highway grade crossings with the assistance of federal funds. No definite conclusions have been announced or reached and the President indicated this week that final decisions were not to be expected before the end of December, although studies were being made of a large number of types of projects. It is understood that consideration is being given to the appropriation of a large sum for grade crossings under a plan by which the railroads would be required to meet a percentage of the cost but arrangements would be made to loan them the money on a long-term basis. It is expected that there will also be a new program of loans to railroads for expenditures which will create business and employment.

The Reconstruction Finance Corporation has under consideration a reduction in the interest rate on railroad loans from 4 per cent to 3½ per cent, according to Chairman Jesse H. Jones, although no final decision has yet been reached. The President has also indicated the possibility of a similar reduction next year in the interest rate on loans from the Public Works Administration.

Meetings & Conventions

The following list gives names of secretaries, date of next or regular meetings and places of meetings:

AIR BRAKE ASSOCIATION.—T. L. Burton, Room 3400, Empire State Building, New York, N. Y. Annual meeting, May 2-4, 1935, Hotel Sherman, Chicago, Ill. (Tentative).

ALLIED RAILWAY SUPPLY ASSOCIATION. F. W. Venton, Crane Company, 836 S. Michigan Ave., Chicago, Ill. To meet with Air Brake Association, Car Department Officers' Association, International Railroad Master Blacksmiths' Association, International Railway Fuel Association, International Railway General Foremen's Association, Master Boiler Makers' Association and the Traveling Engineers' Association.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—W. R. Curtis, F. T. R., M. & O. R. R., Chicago, Ill.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. L. Duncan, 332 S. Michigan Ave., Chicago, Ill.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York, N. Y.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—F. O. Whiteman, Union Station, St. Louis, Mo. Annual meeting, 1935, Chicago, Ill.

AMERICAN ASSOCIATION OF RAILWAY ADVERTISING AGENTS.—E. A. Abbott, Poole Bros., Inc., 85 W. Harrison St., Chicago, Ill. Annual meeting, January 18-19, 1935.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—F. R. Borger, C. I. & L. Ry., 836 S. Federal St., Chicago, Ill.

*AMERICAN RAILWAY ASSOCIATION.—H. J. Forster, 30 Vesey St., New York, N. Y.

Division I.—Operating.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Freight Station Section.—R. O. Wells, Freight Agent, Illinois Central Railroad, Chicago, Ill.

Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Protective Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Safety Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Telegraph and Telephone Section.—W. A. Fairbanks, 30 Vesey St., New York, N. Y. Annual meeting, June 25-27, 1935, Hotel Stevens, Chicago, Ill.

Division II.—Transportation.—G. W. Covert, 59 E. Van Buren St., Chicago, Ill.

Division III.—Traffic.—J. Gottschalk, 143 Liberty St., New York, N. Y.

Division IV.—Engineering.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 12-14, 1935, Palmer House, Chicago, Ill.

Construction and Maintenance Section.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 12-14, 1935, Palmer House, Chicago, Ill.

Electrical Section.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill.

Signal Section.—R. H. C. Balliet, 30 Vesey St., New York, N. Y.

Division V.—Mechanical.—V. R. Hawthorne, 59 E. Van Buren St., Chicago, Ill.

Division VI.—Purchases and Stores.—W. J. Farrell, 30 Vesey St., New York, N. Y.

Division VII.—Freight Claims.—Lewis Pilcher, 59 E. Van Buren St., Chicago, Ill.

Division VIII.—Motor Transport.—George M. Campbell, 30 Vesey St., New York, N. Y.

Car Service Division.—C. A. Buch, 17th and H. St., N. W., Washington, D. C.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W. Ry., 319 N. Waller Ave., Chicago, Ill. Exhibit by Bridge and Building Supply Men's Association.

AMERICAN RAILWAY CAR INSTITUTE.—W. C. Tabbert, 19 Rector St., New York, N. Y. Annual meeting, January, 1935, New York.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—E. H. Gurton, Mgr., Land Settlement and Development, C. N. R., St. Paul, Minn. Semi-annual meeting, December 6-7, 1934, Hotel Sherman, Chicago, Ill.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in co-operation with the American Railway Association, Division IV.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 12-14, 1935, Palmer House, Chicago, Ill.

AMERICAN RAILWAY MAGAZINE EDITOR'S ASSOCIATION.—John Ferrick, Missouri Pacific Lines Magazine, 2108 Missouri Pacific Lines Building, St. Louis, Mo.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C., M., St. P. & P. R. R., 11402 Calumet Ave., Chicago, Ill. Exhibit by Tool Foremen Suppliers' Association. Annual meeting, May 6-8, 1935, Hotel Sherman, Chicago, Ill. (Tentative).

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—R. E. Schindler, Union Trust Bldg., Washington, D. C.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—29 W. 39th St., New York, N. Y. Annual meeting, December 3-7, 1934, at 29 W. 39th St. Railroad Division.—Marion B. Richardson, Ahrens & Richardson, 30 Church St., New York, N. Y.

AMERICAN TRANSIT ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York, N. Y.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—H. L. Dawson, 1427 Eye St., N. W., Washington, D. C. Annual meeting, January 22-24, 1935, Hotel Pennsylvania, New York, N. Y.

ASSOCIATION OF AMERICAN RAILROADS.—J. J. Pelley, President, Washington, D. C.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—F. L. Johnson, Chief Clerk and Claim Agent, General Claims Department, Alton R. R., 340 W. Harrison St., Chicago, Ill. Annual meeting, May 15-17, 1935, New York, N. Y.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS, —Jos. A. Andreucetti, C. & N. W., 1519 Daily News Building, 400 W. Madison St., Chicago, Ill.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—L. F. Flanagan, Detroit Graphite Company, 950 12th St., Detroit, Mich., Meets with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB.—C. R. Crook, 2276 Wilson Ave., N. D. G., Montreal, Que. Regular meetings, second Monday of each month, except June, July and August, Windsor Hotel, Montreal, Que.

CAR DEPARTMENT OFFICERS' ASSOCIATION.—A. S. Sternberg, M. C. B. Belt Ry. of Chicago, 7926 S. Morgan St., Chicago, Ill. Annual meeting, May 2-4, 1935, Hotel Sherman, Chicago, Ill. (Tentative).

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—G. K. Oliver, 2514 W. 55th St., Chicago, Ill. Regular meetings, second Monday of each month, except June, July and August, La Salle Hotel, Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF LOS ANGELES.—J. W. Krause, Room 299, 610 S. Main St., Los Angeles, Cal. Club not active at present.

CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, MO.—J. F. Brady, Main and Barton Sts., St. Louis, Mo. Operation suspended indefinitely.

CENTRAL RAILWAY CLUB OF BUFFALO.—M. D. Reed, 1817 Hotel Statler, McKinley Square, Buffalo, N. Y. Regular meetings, second Thursday of each month, except June, July and August, Hotel Statler, Buffalo, N. Y.

CINCINNATI RAILWAY CLUB.—D. R. Boyd, 2920 Utopia Place, Hyde Park, Cincinnati, Ohio. Operation suspended indefinitely.

CLEVELAND RAILWAY CLUB.—F. L. Frericks, 14416 Alder Ave., Cleveland, Ohio. Meetings temporarily suspended.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich. Annual meeting, May 6-8, 1935, Hotel Sherman, Chicago, Ill. (Tentative).

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—T. D. Smith, 1660 Old Colony Building, Chicago, Ill. Annual meeting, May 6-8, 1935, Hotel Sherman, Chicago, Ill. (Tentative).

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1061 W. Wabasha St., Winona, Minn. Annual meeting, May 2-4, 1935, Hotel Sherman, Chicago, Ill. (Tentative).

MASTER BOILER MAKERS' ASSOCIATION.—A. F. Stiglmeier, 29 Parkwood St., Albany, N. Y. Annual meeting, May 6-8, 1935, Hotel Sherman, Chicago, Ill. (Tentative).

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—James B. Walker, 270 Madison Ave., New York, N. Y. Annual meeting, November 12-15, 1934, Willard Hotel, Washington, D. C.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. W. Kelly, Suite 322, 910 S. Michigan Ave., Chicago, Ill.

NATIONAL SAFETY COUNCIL.—Steam Railroad Section (See Safety Section, American Railway Association).

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Copley-Plaza Hotel, Boston, Mass.

NEW YORK RAILROAD CLUB.—D. W. Pye, 30 Church St., New York, N. Y. Regular meetings, third Friday of each month, except June, July and August, 29 W. 39th St., New York, N. Y.

PACIFIC RAILWAY CLUB.—William S. Wollner, P. O. Box 3275, San Francisco, Cal. Regular meetings, second Thursday of each month, alternately at San Francisco and Oakland, excepting July at Los Angeles and October at Sacramento.

*RAILWAY ACCOUNTING OFFICERS' ASSOCIATION.—E. R. Woodson, Transportation Building, Washington, D. C. Annual meeting, 1935, Detroit, Mich.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton (Treas. and Asst. Sec.), First National Bank Building, Chicago, Ill. Annual meeting, November, 1934, New York, N. Y.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 1941 Oliver Building, Pittsburgh, Pa. Regular meetings, fourth Thursday of each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—Edward Wray, 9 S. Clinton St., Chicago, Ill. Meets with Association of Railway Electrical Engineers.

RAILWAY FIRE PROTECTION ASSOCIATION.—R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1941 Oliver Building, Pittsburgh, Pa. Meets with Mechanical Division, Purchases and Stores Division and Motor Transport Division, American Railway Association.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE

*These organizations are now a part of the Association of American Railroads, but pending completion of organization are operating as heretofore.

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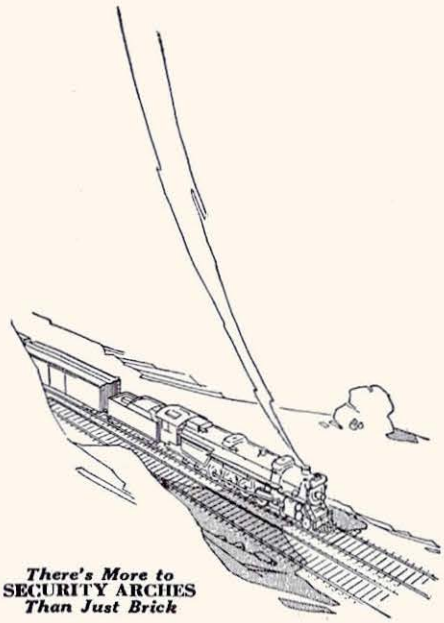
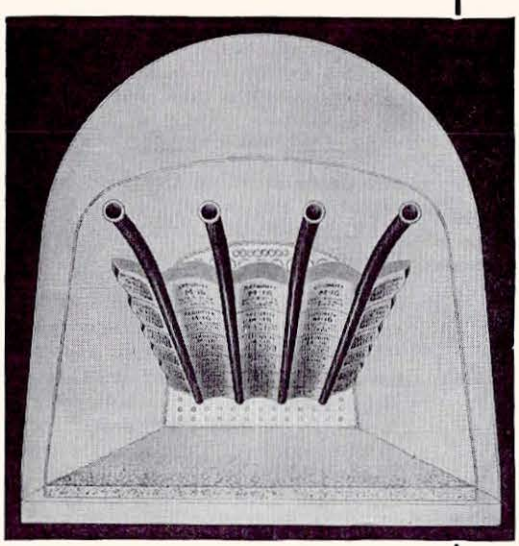


There's More to SECURITY ARCHES *Than Just Brick*



GOOD BRICK

Is The Foundation

Of A

GOOD ARCH

Design the Arch soundly; apply it properly and service it carefully.

Then back up this good work with good Arch Brick and you get Arch satisfaction.

To be sure of good Brick from convenient locations American Arch Company supplies the railroads exclusively from the following plants:

HARBISON-WALKER REFRACTORIES CO.
Pennsylvania Ohio Kentucky
Alabama Missouri

NORTH AMERICAN REFRACTORIES CO.
Pennsylvania Kentucky

IRONTON FIRE BRICK CO.
Ohio

DENVER SEWER PIPE & CLAY CO.
Colorado

ATHENS BRICK & TILE CO.
Texas

LOUISVILLE FIRE BRICK WORKS
Kentucky

GLADDING-McBEAN & CO.
California
Washington

DIAMOND FIRE BRICK CO.
Colorado

DOMINION FIRE BRICK & CLAY PRODUCTS LTD.
Saskatchewan, Canada

CANADA FIRE BRICK CO., LTD.
Ontario, Canada
Quebec, Canada

NRA MEMBER U.S. WE DO OUR PART

AMERICAN ARCH COMPANY

INCORPORATED

Locomotive Combustion Specialists

NEW YORK **CHICAGO**

ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with Telegraph and Telephone Section of A. R. A. Division I.

RAILWAY TIE ASSOCIATION.—A. S. Fathman, 1252 Syndicate Trust Building, St. Louis, Mo.

RAILWAY TREASURY OFFICERS' ASSOCIATION.—L. W. Cox, 1428 Broad Street Station Building, Philadelphia, Pa.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—T. F. Donahoe, Gen. Supvr. Road, Baltimore & Ohio, Pittsburgh, Pa.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Drawer 24, M. P. O., St. Louis, Mo. Meetings temporarily suspended.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with A. R. A. Signal Section.

SOCIETY OF OFFICERS, UNITED ASSOCIATIONS OF RAILROAD VETERANS.—M. W. Jones, Baltimore & Ohio, Mt. Royal Station, Baltimore, Md. Annual meeting, October 5-6, 1935, Cincinnati, Ohio.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S. E., Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta, Ga.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—R. G. Parks, A. B. & C. R. R., Atlanta, Ga.

SUPPLY MEN'S ASSOCIATION.—E. H. Hancock, Treasurer, Louisville Varnish Co., Louisville, Ky. Meets with A. R. A. Division V, Equipment Painting Section.

TOOL FOREMEN SUPPLIERS' ASSOCIATION.—E. E. Caswell, Union Twist Drill Co., 11 S. Clinton St., Chicago, Ill. Meets with American Railway Tool Foremen's Association.

TORONTO RAILWAY CLUB.—N. A. Walford, P. O. Box 8, Terminal "A." Toronto, Ont. Regular meetings, first Friday of each month, except July, August and September, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION.—D. J. Higgins, Gardner-Denver Company, Chicago, Ill. Meets with Roadmasters' and Maintenance of Way Association.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, 1177 E. 98th St., Cleveland, Ohio. Annual meeting, May 2-4, 1935, Hotel Sherman, Chicago, Ill. (Tentative).

WESTERN RAILWAY CLUB.—C. L. Emerson, C., M., St. P. & P., Chicago, Ill. Regular meetings, third Monday of each month, except June, July, August and September, Hotel Sherman, Chicago, Ill.

Construction

BOSTON & ALBANY.—Revised plans and specifications and an estimate of cost of $147,339, exclusive of land and property damages, for the elimination of the Third street and Tanners Lane crossings of this road in Hudson, N. Y., have been approved by the New York Public Service Commission.

CHESAPEAKE & OHIO.—A contract has been given to Boxley Brothers Company, Orange, Va., for a change of line and improved drainage facilities at England Hill, Ky., at a cost of $79,000. A contract has been given to the Langhorne & Langhorne Company, Huntington, W. Va., for filling work at viaducts Nos. 6017 and 6018, Maysville, Ky., at a cost of $119,400.

PENNSYLVANIA.—A contract has been awarded to the Engineering Contracting Corporation, Baltimore, Md., for the construction of a passage and stairways leading from the main waiting room to the south platform; passenger shelter, stairways, etc., along the south front of the station, and temporary stairway on the south front of the Pennsylvania station, Baltimore.

CITY OF ST. LOUIS, MO.—The McCormack-Combs Construction Company, St. Louis, has been awarded the general contract for the construction of a reinforced concrete viaduct to carry Hampton avenue across Manchester avenue, the River Des Peres drainage project, and the tracks of the Missouri Pacific and the St. Louis-San Francisco, at a cost of $245,897. The proposed viaduct will be 802 ft. in length and 60 ft. wide. It will have a 250-ft. approach on the north and a 120-ft. approach from the south, both of which will be 80 ft. wide.

Equipment and Supplies

FREIGHT CARS

THE MESTA MACHINE COMPANY has ordered two flat cars and two gondola cars, all of 100 tons' capacity, from the Standard Steel Car Corporation.

THE MINNESOTA MINING & MANUFACTURING COMPANY contemplates buying from 25 to 100 hopper cars of 70 tons' capacity.

THE MEXICAN RAILWAY, reported in the *Railway Age* of July 14 as inquiring for 20 automobile cars and 30 box cars of 40 tons' capacity, has ordered this equipment from the Pressed Steel Car Company.

SIGNALING

NEW YORK CENTRAL.—The New York State Public Service Commission has approved as not excessive the proposals of the General Railway Signal Company, for furnishing signal materials in connection with the elimination of grade crossings in the city of Syracuse. These proposals cover signal work west of Syracuse Junction; materials for automatic signals east of Syracuse Junction and for desk switches and other materials for the operation of signals. The items aggregate $86,906.15.

MISCELLANEOUS

BOSTON & MAINE.—The Edward G. Budd Manufacturing Company has placed an order with the Hyatt Roller Bearing Company, Newark, N. J., for journal bearings and boxes for this road's new streamlined "Flying Yankee."

GRAND TRUNK WESTERN.—This road has placed an order with The Timken Roller Bearing Company, Canton, Ohio, for the engine truck bearings under four of its existing high speed passenger locomotives. The Grand Trunk Western now has the trailer trucks of 17 of its existing locomotives equipped with Timken bearings.

THE TIMKEN ROLLER BEARING COMPANY has received an order from the Standard Steel Car Corporation for four car sets of Timken roller bearings for freight car trucks, to be used under two flat cars and two gondola cars of 100 tons' capacity, now under construction for the Mesta Machine Company, Pittsburgh, Pa.

Supply Trade

Francis D. Bartow was elected a member of the board of directors of the **General Electric Company** at a meeting of the board on October 26.

The Henry J. Linn Company, 250 Stuart street, Boston, Mass., has been appointed New England sales agent for the **Globe Steel Tubes Company,** Milwaukee, Wis.

Roscoe Seybold, controller of the **Westinghouse Electric & Manufacturing Company, William G. Marshall,** assistant to vice-president and **Ralph Kelly,** director of the budget, have been elected vice-presidents, all with headquarters at East Pittsburgh, Pa.

The Edward G. Budd Manufacturing Company, Philadelphia, Pa., in connection with the construction of light weight high speed trains and other units has built special dies, jigs, tools, welding equipment, etc. This equipment is installed in one of its large buildings in the Philadelphia plant which has been rebuilt for straight line production with two tracks running down through its center, with the necessary wells and pits. These tracks connect with the yard where ample rail storage facilities are being provided also with both the Pennsylvania and the main line of the Reading. Three trains are under construction—one for the Chicago, Burlington & Quincy and two for the Boston & Maine. The company now employs over 1500 men on three shifts.

Preferred stockholders of the **McKinney Steel Holding Company** voted approval of the merger of the **Corrigan, McKinney Steel Company** with the **Republic Steel Corporation,** on October 25. Provisions under which the preferred stock of the holding company was issued were to the effect that two-thirds of this class of stockholders must approve any merger. At the meeting on October 25, 57,105 shares, or 78.7 per cent, were voted for the merger and 461 against. There are 72,500 preferred shares outstanding, of which the Union Trust Company owns more than a third. The special meeting of stockholders of the Republic Steel Corporation to vote on the Republic and Corrigan, McKinney Steel Company merger has been postponed to December 17.

L. M. Klinedinst, vice-president in charge of all industrial sales of the **Timken Roller Bearing Company,** Canton, Ohio, was elected to the board and also promoted to the office of vice-president in charge of sales, to fill the vacancy created by the recent resignation of **Judd W. Spray,** at a meeting of the board of directors on October 30. **T. V. Buckwalter,** who has been vice-president of the Timken Roller Bearing Company for several years, has been elected vice-president and director of the **Timken Steel & Tube Company.** Mr. Klinedinst has been associated with the Timken Company since leaving school 29 years ago; after serving in various junior executive positions in both the manufacturing and selling divisions he was

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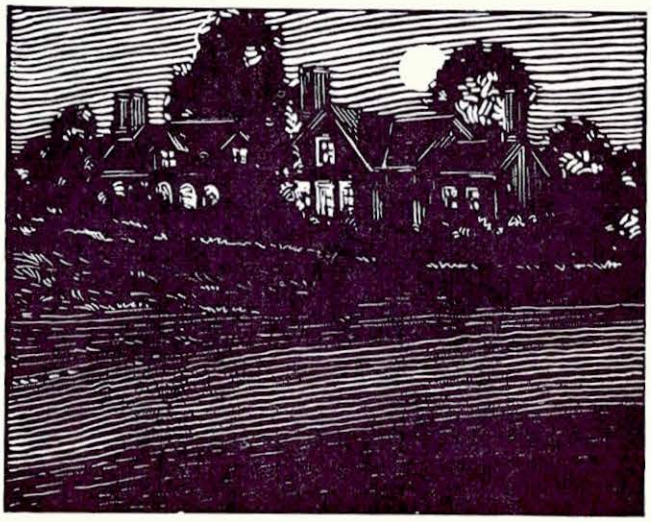
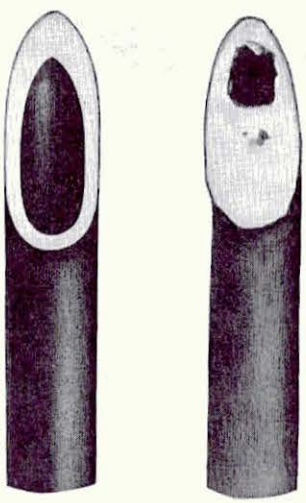
As different as

DAY and NIGHT





THERE is a vast difference between *re*manufactured superheater units and superheater units that have been reconditioned in any other way.

Look at the return bend sections below. On the outside they looked very similar, but when they were cut open they were as different internally as day and night.

In the *re*manufacture of unserviceable units—just as in the manufacture of new units—we use a special forging method for forming the return bends *from the tubing itself*—which provides the full-size internal areas required for high superheating efficiency. Besides, this forged-return-bend unit construction has the soundness, toughness, and reliability that will withstand severest operating conditions for many years.

There is too much reliance placed on superheater units for economy, dependability, and safety of operation, to run the risk entailed by patch-repairing them.

Have your unserviceable units *re*manufactured—you will be amply repaid by the better service they give, not just for a month—but for several years.

ELESCO

Superheaters
Feed Water Heaters
Exhaust Steam Injectors
Superheated Steam Pyrometers
American Throttles

THE SUPERHEATER COMPANY

Representative of AMERICAN THROTTLE COMPANY, Inc.

60 East 42nd Street
NEW YORK

NRA MEMBER U.S. WE DO OUR PART A-921

Peoples Gas Building
CHICAGO

Canada: The Superheater Company, Limited, Montreal

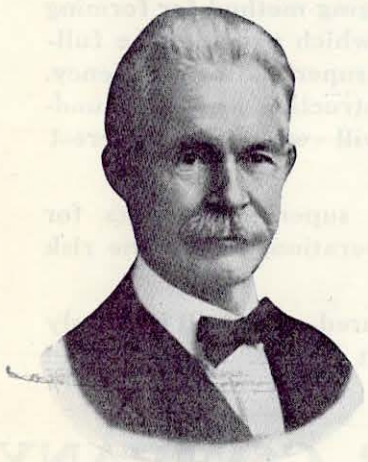
identified with automotive development work for many years, serving as assistant sales manager. In 1921 he was appointed general manager of the Industrial division, and since 1930 has been vice-president in charge of all industrial sales.

Frederic Crosby, vice-president in charge of production of the **American Hoist & Derrick Company,** St. Paul, Minn., has been elected president, to succeed **Frank J. Johnson,** who has resigned because of ill health. **Harold O. Washburn,** general superintendent and treasurer, has been elected vice-president and treasurer to succeed Mr. Crosby. Mr. Crosby was born in St. Paul in 1887 and attended the University of Minnesota. He spent his apprenticeship in the plant of the company, working up through various departments until 1922, when he was appointed general manager in charge of pro-

Frederic Crosby

duction. He held this position until 1928, when he was elected vice-president in charge of production, which position he has held until his recent election.

Mr. Johnson was born in Racine, Wis., in 1856, and in 1881, in partnership with



F. J. Johnson

Oliver Crosby, opened a machine shop, founding the American Manufacturing Company in 1882. In 1892, they reorganized as the American Hoist & Derrick Company, enlarging their manufacturing facilities. In the same year he established a sales office for the company in Chicago, where he remained until December, 1922, when he returned to the St. Paul office.

F. R. Kohnstamm has been appointed manager of the Lighting division of the **Westinghouse Electric & Manufactur-**

F. R. Kohnstamm

ing Company. In his new position, he will have supervision over all lighting activities, including sales, engineering and manufacturing, now conducted at the Westinghouse Cleveland Works, in Edgewater Park, Ohio. Mr. Kohnstamm, a native of Scranton, Pa., has been associated with the Westinghouse Company since 1917. He was located in East Pittsburgh for the first two years of his service. In 1919 he was transferred to Mansfield, Ohio, where new headquarters for the company's merchandising department had been established. In 1922 he was made manager of the appliance division of this department. Five years later, in 1927, he was appointed assistant sales manager of the same department and, in 1931, he became director of merchandise. Early in 1933, he returned to the East Pittsburgh, Pa., headquarters of the company as sales promotion manager. He held that position until his present appointment and transfer to Cleveland.

OBITUARY

Edward McCormick, who, prior to November, 1931, had been vice-president in charge of sales of the Railway Steel-Spring Company, at New York, died on October 27 at his home in Brooklyn, N. Y., at the age of 58 years. Mr. McCormick, who in 1919 was treasurer of this company which is now the Railway Steel-Spring division of the American Locomotive Company, was in that year appointed assistant to the president and the following year was elected vice-president. He first served as vice-president in charge of financial affairs and in 1927 became vice-president in charge of sales. At the time of his death Mr. McCormick was head of a bond brokerage firm under his name in Brooklyn.

Frank J. Sprague, well-known scientist, inventor and engineer, for many years active in electrical development, and known as the father of electric traction, having built the first successful electric railway line in the United States, died of pneumonia on October 26 at his home in New York. Mr. Sprague was born July 25, 1857, at Milford, Conn. After graduation from the United States Naval Academy in 1878, he remained in the navy until 1883, when he resigned to become an assistant to Thomas A. Edison, which associaton continued for one year. In 1884, Mr. Sprague organized the Sprague Electric Railway & Motor Company. In 1887 he installed the first trolley system in the United States. This was at Richmond, Va., and consisted of a complete power plant, 13 miles of track and 40 cars, each of which was equipped with two motors. Its success brought about a revolution in transportation methods and was rapidly followed by numerous installations all over the country. Among Mr. Sprague's notable contributions to the field of electrical engineering are his inventions associated with elevator operations; remote control equipment for elevators, one of his inventions, is now in universal use. He introduced the dual elevator system in 1927. In the railroad field his most important invention was the multiple-unit system of control for electric cars and locomotives which was installed on the South Side Elevated in Chicago in 1897 and 1898 and which is now used throughout

Frank J. Sprague

the world. His "wheelbarrow" or nose suspension for traction motors is still the most widely used method of motor mounting. Another of his developments in the railroad field was the Sprague system of automatic train control. In 1889 he was awarded the gold medal at the Paris Electrical exhibition; in 1904 the grand prize at the St. Louis exhibition, and in 1910 the Edison medal. He was also awarded the Elliot-Cresson medal and the Franklin medal of the Franklin Institute. His degrees included Dr. Engrg. from Stevens Inst. of Tech., D.S.C. from Columbia, L.L.D. from Pennsylvania; he was an honorary member of the Institute of Electrical Engineers, the Franklin Institute and the National Electric Light Association. Honored in many countries and by many societies and institutes, Mr. Sprague was recently awarded the John Fritz gold medal for 1935 and was to have received it at the winter convention of the American Institute of Electrical Engineers, in January.

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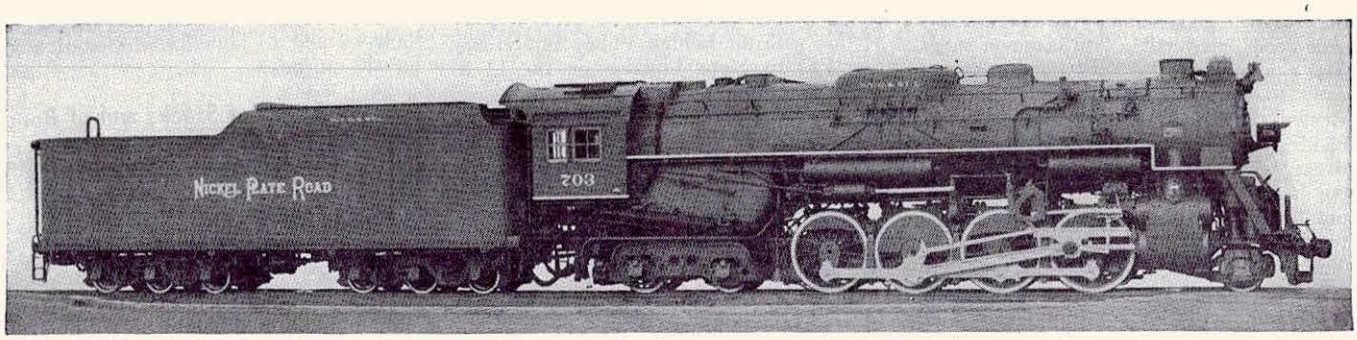
NEW POWER
ON THE NICKEL PLATE



Weight on Drivers, 254,000 pounds; Weight of Engine, 416,000 pounds; Cylinders, 25 x 34 inches; Diameter of Drivers, 69 inches; Boiler Pressure, 245 pounds; Maximum Tractive Power, 64,100 pounds.

OPERATING RECEIPTS 1933 VS. 1929—CLASS 1 ROADS

	1933	1929
Freight	$2,492,738,042	$4,825,622,121
Passenger	329,341,854	873,564,246

Freight traffic at all times is by far the main and most important source of railroad revenue. And speed is becoming a very influential factor in this traffic also.

In fact, the Railway Age, on December 23, 1933, made the statement that 73% of all the tonnage moved by trucks does so partly because that service is faster than railway service.

Why not therefore analyze the possibilities of regaining much freight transportation with modern high-speed freight locomotives?

AMERICAN LOCOMOTIVE COMPANY

30 CHURCH STREET • NEW YORK • N.Y.

Financial

APACHE.—*Receiver's Certificates.*—The Interstate Commerce Commission has authorized the receiver of this company to issue not exceeding $28,000 of receiver's certificates and to sell them at not less than par to pay taxes.

ATCHISON, TOPEKA & SANTA FE.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon its lines from Dillon, N. M., to Des Moines, 44.88 miles, and from Carisbrooke, N. M., to Yankee, 3.14 miles.

ATLANTIC COAST LINE.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority for the authentication and delivery of $6,500,000 of general unified mortgage 4½ per cent bonds, to be held in the treasury, in reimbursement of expenditures in paying a like amount of bonds of the Savannah, Florida & Western which matured April 1.

BANGOR & AROOSTOOK.—*Securities.*—The Interstate Commerce Commission has authorized this company to issue $5,176,000 of consolidated refunding mortgage 4 per cent bonds, convertible into common stock. The Commission also authorized the company to sell $2,000,000 of the bonds to Brown, Harriman & Co., Inc., at 97½, making the cost to the railroad approximately 4.35 per cent. The remainder of the issue is to be exchanged for oustanding 5 per cent bonds, part of which mature in 1937 and the remainder in 1939. The exchange is to be made at par, but with compensatory interest at the rate of 1 per cent on the 5 per cent bonds from the date of exchange to the date of maturity. The proceeds of the $2,000,000 issue are to be used to retire an equal amount of Northern Maine Seaport Railroad first mortgage bonds which mature April 1, 1935.

DELAWARE & HUDSON.—*Notes.*—The Interstate Commerce Commission has authorized this company to issue and re-issue from time to time $16,000,000 of promissory notes.

FORT SMITH & WESTERN.—*R. F. C. Loan.*—The receiver has applied to the Reconstruction Finance Corporation for an additional loan of $136,072 to provide for various items of bills, taxes, and its prospective deficit for 1934. One of the items named is for $2,547 as the road's contribution to the pension fund to be administered by the Railroad Retirement Board. The road has already received $227,434 in loans from the R. F. C.

GRAND RIVER VALLEY.—*Abandonment.*—The Interstate Commerce Commission has authorized this company to abandon as to inter-state and foreign commerce its railroad extending from Grand Junction, Colo., to Fruita, 15.9 miles, together with a 5.4-mile branch line extending from a point between Hunter and Sykes on its main line to Enterprise.

HARDWICK & WOODBURY.—*Abandonment.*—The Interstate Commerce Commission has authorized this company to abandon its entire railroad extending from Hardwick, Vt., to Woodbury, 9 miles.

LEHIGH & NEW ENGLAND.—*Abandonment.*—The Interstate Commerce Commission has authorized this company to abandon a branch line extending from a connection with the Lehigh Valley at Slatington, Pa., to Slate Junction on the L. & N. E., approximately 6 miles.

LOUISIANA & ARKANSAS.—*Acquisition.*—This company has applied to the Interstate Commerce Commission for authority to acquire the property of the Louisiana Railway & Navigation Company, which it now controls through stock ownership and lease.

MINNEAPOLIS & ST. LOUIS.—*Receiver's Certificates.*—The Interstate Commerce Commission has authorized the receiver of this company to issue $1,185,000 of 6½ per cent receiver's certificates to renew or extend maturing certificates of like amount.

PITTSBURGH & WEST VIRGINIA.—*R. F. C. Loan.*—This company has applied to the Reconstruction Finance Corporation for a loan of $500,000 for the purpose of paying $300,000 of equipment trust certificates and $200,000 of unpaid vouchers.

SOUTHERN PACIFIC.—*Trackage Rights.*—The Interstate Commerce Commission has authorized the Visalia Electric to operate under trackage rights in freight service over 3.2 miles of line of the Fresno Traction Company in Fresno, Cal.; over the Peninsula Railway from Berryessa to San Jose, 9.2 miles; and over the San Jose Railroad from Linda Vista within and north of San Jose, 6.8 miles. The applicant and the grantors of these rights are subsidiaries of the Southern Pacific.

TOLEDO, PEORIA & WESTERN.—*Bonds.*—The Interstate Commerce Commission has authorized this company to issue $500,000 of first mortgage, series A 6 per cent bonds, to be sold at not less than 90, which would make the annual cost approximately 7 per cent.

WHITE RIVER.—*Abandonment.*—The Interstate Commerce Commission has authorized this company to abandon as to interstate and foreign commerce its entire line of railroad extending from Bethel, Vt., to Rochester, 19.3 miles.

YREKA WESTERN.—*Acquisition.*—This company has applied to the Interstate Commerce Commission for authority to acquire and operate the property of the Yreka Railroad and to issue 250 shares of stock for the purpose.

Average Prices of Stocks and of Bonds

	Oct. 30	Last week	Last year
Average price of 20 representative railway stocks..	34.67	35.24	35.04
Average price of 20 representative railway bonds..	74.09	74.38	66.27

Dividends Declared

Albany & Vermont.—$1.35, payable November 15 to holders of record October 31.

Bangor & Aroostook.—62c, quarterly; Preferred, $1.75, quarterly, both payable January 1 to holders of record November 30.

East Mahanoy R. R.—$1.25, semi-annually, payable December 15 to holders of record December 5.

Elmira & Williamsport.—7 Per Cent Preferred, $1.61, semi-annually, payable January 2 to holders of record December 20.

Lehigh Coal & Navigation.—25c, semi-annually, payable November 30 to holders of record October 31.

Northern R. R. of New Jersey.—4 Per Cent Guaranteed, $1.00, payable December 1 to holders of record November 20.

Reading Company.—1st Preferred, 50c, quarterly, payable December 13 to holders of record November 22.

* * * *

Some Members of the Bridge and Building Association Convention Party at A Century of Progress Exposition—A Report of this Meeting Which Was Held at Chicago, on October 16-18, Appeared in the Railway Age of October 27

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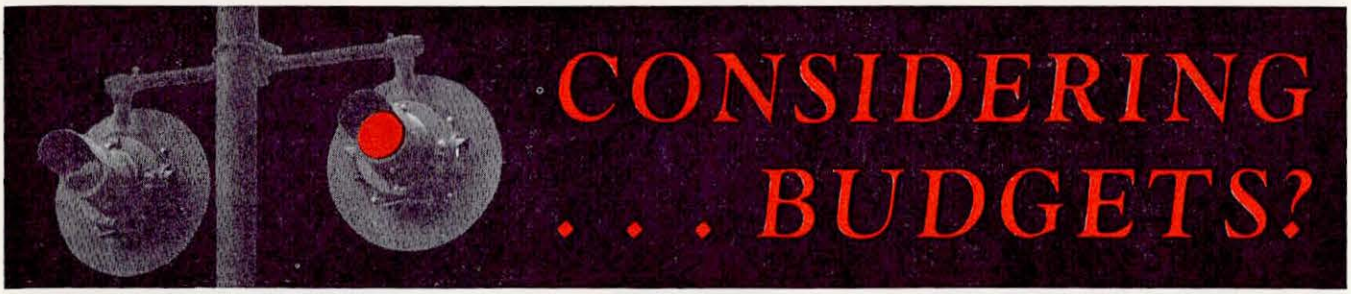
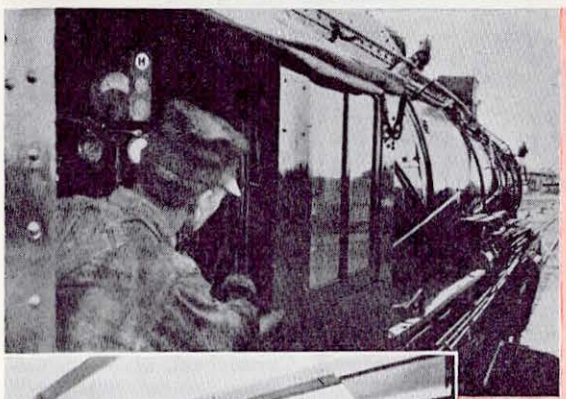
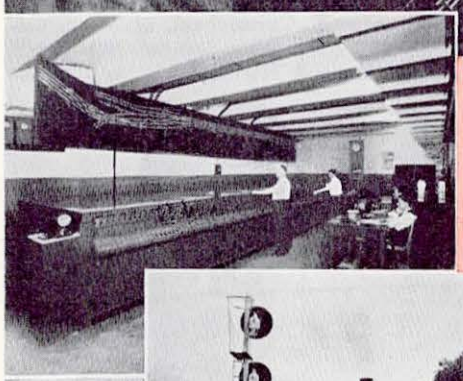
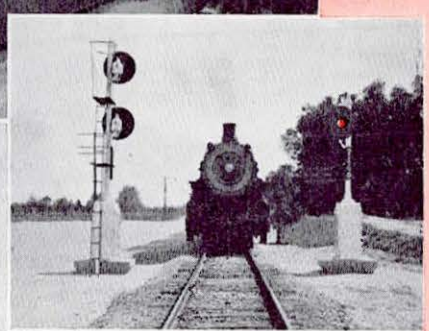


CONSIDERING . . . BUDGETS?







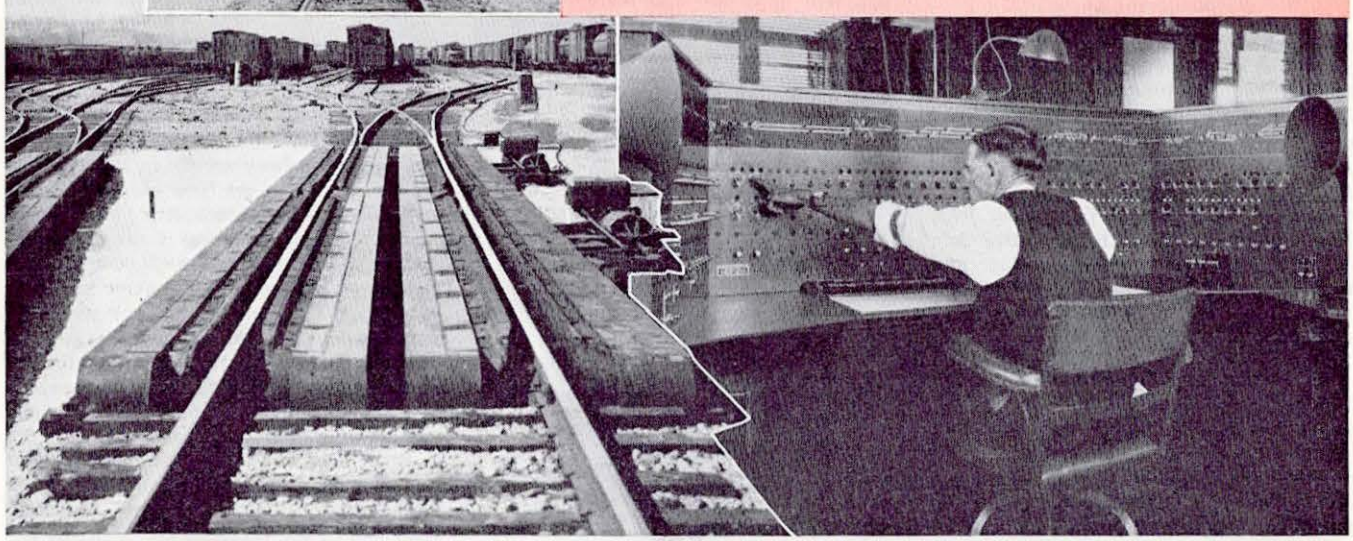
Then the following quotation will be of interest:

> "Recently, one railroad reviewed the economies of 175 signaling projects that were completed during the past seven years and found that the net annual saving resulting from a total expenditure of $572,012 is $457,184 or 79 per cent . . . Many of these projects were comparatively small, the average expenditure being only $3,269, and the average net saving amounting to $2,612."
>
> Railway Signaling, October, 1933

Expenditures for modernizing signaling will not only save enough in maintenance and operating costs to pay for the installations and to create an annual return on the investment, but will also increase operating efficiency and safety. » » » » »

A survey of your operating requirements at this time would probably show that a modest expenditure for signal modernization would prove highly beneficial to your road. » » »

Without obligation, "Union" engineers are at your service to assist in any signaling problem. » » » » » » »



1881 **Union Switch & Signal Co.** 1934

SWISSVALE, PA.

NEW YORK MONTREAL CHICAGO ST. LOUIS SAN FRANCISCO

Railway Officers

EXECUTIVE

Frederick A. Gaby has been appointed assistant to the president of the Canadian Pacific, with headquarters at Montreal. Dr. Gaby, in addition to such further duties as may be assigned to him by the president, will have direct charge of the investigation of other forms of competition and the policies of the company in respect thereto, and of C. P. R. co-operative activities with the Canadian National.

William Scott Campbell, whose appointment as vice-president and general manager for the Kentucky & Indiana Terminal was noted in the *Railway Age* of October 27, was born on September 19, 1879, at Centralia, Ill. He was educated in the public schools at Patoka, Ill., and entered railway service in October, 1897, serving consecutively until 1900 as switchman, brakeman and conductor for the Elgin, Joliet & Eastern. From February, 1900, to August, 1914, he served successively as yardmaster, trainmaster and superintendent of terminals for the same road. He served in the transportation and operating departments of the Southern Pacific at San Francisco, Cal., from July, 1915, to March, 1917. On the latter date Mr. Campbell was appointed manager and chief engineer of the Kentucky & Indiana Terminal which position he held until his recent appointment.

William Scott Campbell

W. N. Deramus, general manager of the Kansas City Southern, with headquarters at Kansas City, Mo., has been appointed also vice-president. Mr. Deramus has been connected with this company for 25 years. He was born on March 25, 1888, at Cooper, Ala., and entered the service of the K. C. S. in November, 1909, as a telegraph operator, being promoted to train dispatcher in February, 1910. Five years later Mr. Deramus was advanced to chief dispatcher and on April 1, 1918, he was promoted to superintendent of car service, with headquarters at Kansas City. In January, 1925, he was appointed superintendent of the Southern division and on January 1, 1928, he was advanced to general manager, at Kansas City, which position he was holding at the time of his recent appointment.

W. N. Deramus

W. W. Meyer, assistant general counsel for the New York, New Haven & Hartford, has also been appointed assistant to the president. Mr. Meyer, who has been in the service of the New Haven for 19 years, was born on August 15, 1887, at Ada, Ohio, and was graduated from Ada high school and Ohio Northern University (A.B. degree) in 1911, Yale University (M.A. degree) in 1912, and Yale Law School (LL.B. degree) in 1915. He was admitted to the Connecticut Bar in June, 1915. Mr. Meyer entered the employ of the New Haven in July, 1915, as assistant attorney after his graduation from law school and continued in that capacity until he enlisted in the Army in July, 1917. He resumed his railroad duties in June, 1919, as assistant to the counsel for the New Haven. In July, 1920, he was appointed assistant commerce counsel and in October, 1921, was appointed commerce counsel in which capacity he had full charge of all proceedings before the Interstate Commerce Commission. In May, 1931, Mr. Meyer was appointed assistant general counsel, and since then has devoted much of his time to the legal phases of the company's financing.

W. W. Meyer

FINANCIAL, LEGAL AND ACCOUNTING

George A. Walker has been appointed assistant general solicitor of the Canadian Pacific, with headquarters at Montreal.

Elmer L. Beach, assistant general attorney for the Baltimore & Ohio, has been appointed assistant general attorney for the Chesapeake & Ohio, with headquarters at Richmond, Va.

C. W. Patterson, auditor of disbursements of the Gulf, Mobile & Northern, has been appointed to the newly-created position of assistant comptroller, with headquarters as before at Mobile, Ala.

F. J. Tague, special assistant to the auditor of freight receipts of the Boston & Maine, has been promoted to auditor of freight receipts of this road, the Maine Central and the Portland Terminal, succeeding **N. H. Ricker,** who has been assigned to other duties.

George T. Carmichael, whose appointment as comptroller for the New York, New Haven & Hartford was noted in the *Railway Age* of October 27, has also been appointed comptroller of the New England Steamship Company and the Hartford & New York Transportation Company. Mr. Carmichael was born in New Haven, Conn., and entered railway service in the accounting department of the New Haven 26 years ago, after being graduated from public school and Yale Business College. After six years as a clerk he was appointed chief clerk to the statistical accountant in April, 1914, and two months later was promoted to valuation auditor. When the government took over control of the railroads during the war period, Mr. Carmichael was appointed assistant to the federal auditor, serving in that capacity until the return of the roads to private control, when he was appointed general auditor of the New Haven. He served two terms as chairman of the valuation committee of the Railway Accounting Officers Association.

George T. Carmichael

R. Parke Jones, whose appointment as chief finance and accounting officer for the Seaboard Air Line, with headquarters at Norfolk, Va., was noted in the *Railway Age* of October 20, was born on April 20, 1892, at Norfolk, Va., and attended

Continued on next left-hand page

Watch costs go down!

When Copper-Steel Pipe is adopted for use on locomotives and cars, maintenance costs go down. This fact is being turned to account by an increasing number of railroads year by year.

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the public schools and business college. He entered the service of the Virginian in 1907, as an office boy in the engineering department. In 1909 he became clerk in

R. Parke Jones

the joint freight agency of the Southern, the Atlantic Coast Line and the Chesapeake Steamship Company. During 1909 and 1910 he was employed by the Southern successively as clerk, baggage master, freight receiver and assistant cashier at Norfolk and Portsmouth, Va. In 1910 he entered the service of the Seaboard Air Line and served successively in various capacities, among which were assistant general bookkeeper, special accountant and principal assistant to the corporate comptroller (during federal control). He became assistant general auditor in March, 1920, and assistant to the vice-president in November, 1922. In 1927 he was appointed comptroller and in 1931 became chief accounting officer for the receivers. He is an officer or director of the various subsidiaries of the Seaboard, including the Macon, Dublin & Savannah and the Baltimore Steam Packet Company.

B. F. Allen, whose appointment as treasurer for the receivers of the Seaboard Air Line at Portsmouth, Va., was noted in

B. F. Allen

the *Railway Age* of October 20, entered the service of the Seaboard in 1905 as clerk in the office of the auditor of freight accounts at Portsmouth. From 1906 to 1908 he was clerk in the agency and yard offices of the Southern at Pinners Point terminal, Va. In 1908 he became clerk in the office of the auditor of freight accounts for the Seaboard Air Line, becoming traveling auditor for the Norfolk Southern in 1910. He became cashier and station accountant for the Seaboard Air Line at Portsmouth in 1912 and from 1914 to 1917 he served as station accountant, chief clerk and general foreman for the Seaboard Hutchinson Island terminals at Savannah, Ga. Mr. Allen left railroad service in 1917, returning in 1919 as accountant in the office of the comptroller of the S. A. L. From 1920 to 1932 Mr. Allen served successively as stores auditor, assistant to the auditor of disbursements, assistant to general auditor, and assistant general auditor for the Seaboard Air Line and in 1932 he was appointed auditor of disbursements.

OPERATING

G. J. Johler, chief clerk in the office of the superintendent of telegraph of the Chicago, Rock Island & Pacific, has been promoted to assistant superintendent of telegraph, with headquarters as before at Chicago, succeeding **A. W. Douglas,** deceased. **C. O. Ellis,** telegraph and telephone inspector at Chicago has been appointed to the newly-created position of telegraph and telephone engineer of the system, with the same headquarters.

T. C. MacNabb has been appointed general superintendent of the New Brunswick district of the Canadian Pacific to succeed **James Miller Woodman,** retired. Mr. Woodman was born on May 13, 1866, at St. Marys, Ont., and was educated at the public schools at Hamilton, Ont. He entered the service of the Hamilton & Northwestern (now Canadian National) as brakeman in May, 1885. He has served consecutively from 1888 to 1896 as brakeman, conductor and yardmaster for the Chicago & Alton (now the Alton). From 1896 to 1903 he served as yardmaster and general yardmaster for the Terminal Railroad Association of St. Louis. In 1903 he became general yardmaster of the Wiggins Ferry Company and in 1907 was appointed trainmaster for the Indiana Harbor Belt. Mr. Miller was out of railroad employ for two years and in 1912 returned as superintendent of the Winnipeg Terminal division of the Canadian Pacific with which road he has since served successively as superintendent of the Montreal Terminal division, general superintendent of the Quebec district and general superintendent of the New Brunswick district.

Frank A. Young, general eastern passenger agent of the Canadian National at New York, has been appointed general manager of the National Terminals of Canada at Montreal, succeeding **Alexander Fleming,** who is retiring. Mr. Young was born in Winnipeg and received his first experience in transportation with the Canadian Northern. Following the development of that company's lines in Western Canada, Mr. Young was transferred to Chicago where he opened a commercial office for the company. Later he was transferred to Toronto where, for a time, he was division freight agent after the opening of Canadian Northern lines in the east. He

Frank A. Young

later went to New York to open an office for the promotion of business from the eastern states.

Mr. Fleming joined the Terminal Warehouse & Cartage Company, predecessor to the National Terminals, in 1907. He was appointed manager of that organization in May, 1928, and general manager of the National Terminals of Canada, Ltd., in October, 1928, when the present terminals organization was formed. Mr. Fleming is a member of the Montreal Board of Trade and past president of the Canadian Storage and Transfermen's Association and president of the Montreal branch of that organization.

John H. G. Little, whose appointment as superintendent of transportation of the Missouri-Kansas-Texas, with headquarters at Denison, Tex., was noted in the *Railway Age* of October 27, was born on December 23, 1880, at Holden, Mo. He entered the service of the Katy in November, 1900, as a ticket and freight clerk at Atoka, Okla., then serving successively until October, 1917, as a timekeeper in the bridge and

John H. G. Little

building department, chief clerk to the superintendent of bridges and buildings, supervisor of construction of bridges and culverts, chief clerk to superintendent, in-

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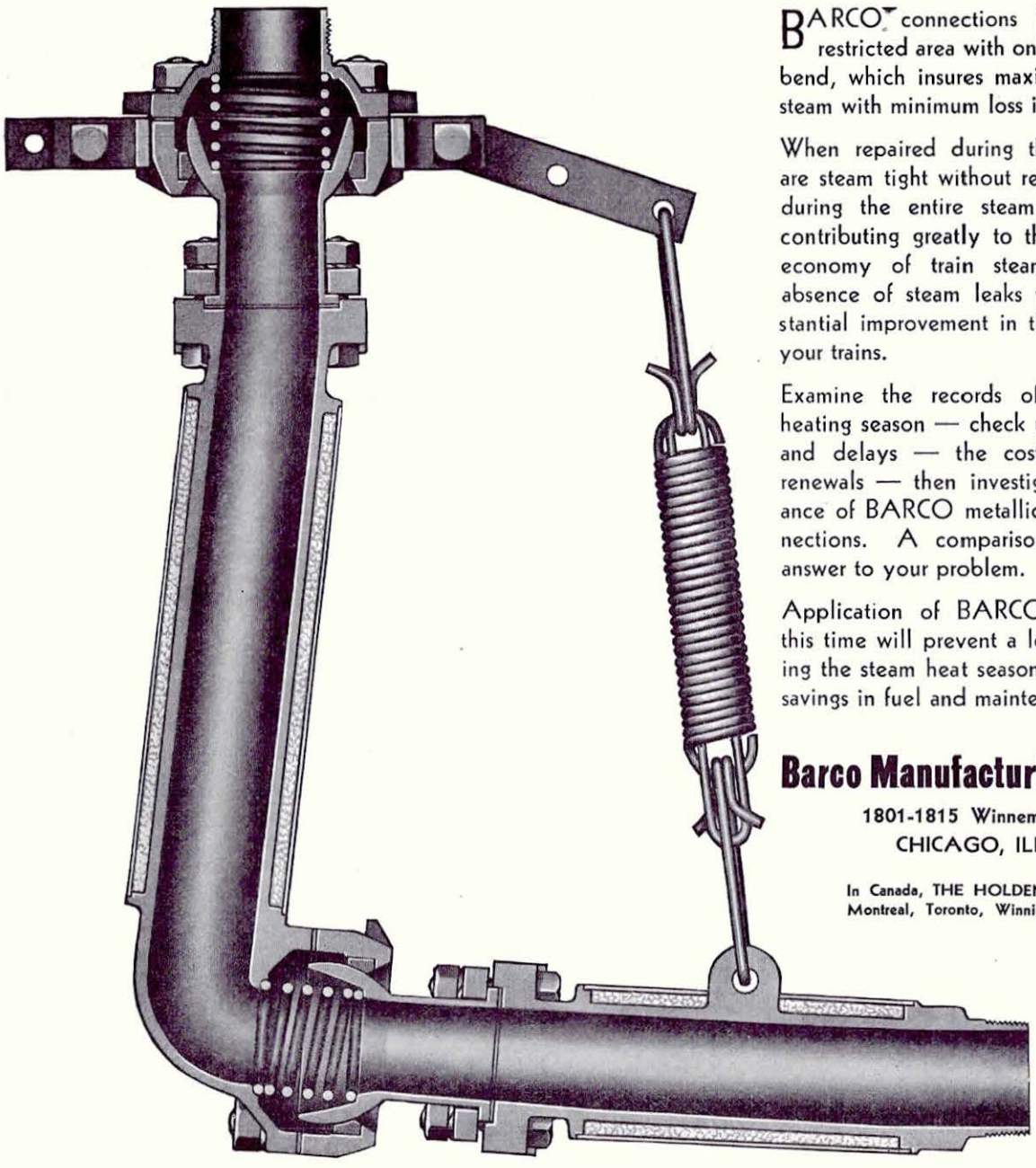

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spector of transportation, agent, freight agent, and inspector of transportation. At the end of this period, Mr. Little was advanced to trainmaster with headquarters at Denison, being transferred to Sedalia, Mo., a year later. In March, 1920, he was promoted to superintendent with headquarters at Oklahoma City, then being transferred successively to Waco, Tex., and Smithville. In May, 1928, he was appointed superintendent of the Parsons district, then being transferred successively to the McAlester district, and the Northern district, being located on the latter district, with headquarters at Parsons, Kan., at the time of his recent promotion to superintendent of transportation.

Fred P. Blount, whose appointment as superintendent on the Missouri-Kansas-Texas of Texas, with headquarters at Wichita Falls, Tex., was noted in the *Railway Age* of October 27, was born on August 14, 1886, at Colchester, Ill. He entered railway service in January, 1906, as an operator on the Katy, being promoted to train dispatcher in August, 1907. Three years later he left the service of this company to go with the Southern Pacific as a dispatcher at Bakersfield, Cal. After

Fred P. Blount

several months he went with the Oregon-Washington Railroad & Navigation Company as a dispatcher at The Dalles, Ore., returning to the Southern Pacific at Bakersfield, in December, 1910. In June, 1913, Mr. Blount returned to the Katy as a dispatcher at Smithville, Tex., later being transferred to Muskogee, Okla., where he was promoted to chief dispatcher. In September, 1918, he was further advanced to trainmaster with the same headquarters, then being transferred successively to Sedalia, Mo., Denison, Tex., and back to Muskogee. He was located at the latter point at the time of his recent promotion to superintendent of the Northwestern district with headquarters at Wichita Falls.

N. S. Menaugh, superintendent of freight transportation for the Eastern region of the Pennsylvania, has been appointed general superintendent of telegraph, with headquarters at Philadelphia, Pa., succeeding **James Buckelew,** retired. **J. C. White,** superintendent of the Philadelphia Terminal division, has been appointed superintendent of freight transportation for the Eastern region at Philadelphia, succeeding Mr. Menaugh. **H. E. Wolcott,** superintendent of the Williamsport division has been appointed superintendent of the Philadelphia Terminal division at Philadelphia, succeeding Mr. White. **E. C. Gegenheimer,** superintendent of the Toledo division, has been appointed superintendent of the Williamsport division at Williamsport, Pa., succeeding Mr. Wolcott. **D. K. Chase,** master mechanic of the Pittsburgh-Conemaugh-Monongahela division, has been appointed superintendent of the Toledo division at Toledo, Ohio, succeeding Mr. Gegenheimer. Mr. Menaugh was born in Florin, Pa., on January 10, 1877, and entered the service of the Pennsylvania in 1893 as telegraph operator, serving in this capacity until 1901. From 1902 to 1927 he served successively as telegraph operator, extra train dispatcher, train dispatcher, assistant freight trainmaster, assistant trainmaster and freight trainmaster. In 1927 he was appointed superintendent of freight transportation at Philadelphia.

Mr. Buckelew was born at Jamesburg, N. J., on October 7, 1864, and entered the service of the Pennsylvania in September, 1880, as a chainman. He left railroad service in December, 1880, returning in July, 1885, as a rodman in the engineering corps, and was later transferred to the maintenance of way department. In May, 1888, he was appointed assistant supervisor and in April, 1890, supervisor. He became assistant engineer in January, 1900, and in June, 1903, he was promoted to principal assistant engineer of the Philadelphia, Baltimore & Washington. He was appointed superintendent of the Central division of the Pennsylvania in January, 1906, and the following year was transferred to the Allegheny division. In January, 1912, he became superintendent of the West Jersey & Seashore and the Camden terminal division. In 1917, he was made superintendent of the Maryland division at Wilmington, Del., and was appointed general superintendent of telegraph in January, 1929.

Mr. White was born in Huntingdon, Pa., on June 9, 1888, and was graduated from the public and high schools of Huntingdon and from Pennsylvania State College. He entered the service of the Pennsylvania as a chainman in the division engineer's office at Tyrone in June, 1912. After serving as chainman, rodman and draftsman he was promoted to assistant supervisor, in which capacity he served from May, 1917, to November, 1919, on several divisions. In November, 1919, Mr. White was assigned to the Maryland division as assistant master carpenter. In March, 1921, he was transferred as assistant supervisor to the Philadelphia Terminal division and in May, 1922, to the Baltimore division. In July, 1922, he was promoted to track supervisor and served as such on the Schulykill and Middle divisions until January, 1928, when he was promoted to division engineer and served in that capacity on the Richmond, Logansport and New York divisions. Mr. White next served consecutively as superintendent of the Monongahela division at Uniontown, Pa., of the St. Louis division at Terre Haute, Ind., and of the Eastern division at Pittsburgh. In July, 1933, he became superintendent of the Philadelphia terminal division at Philadelphia.

TRAFFIC

A. H. Davis, general agent for the Canadian National, with headquarters at St. Paul, Minn., has been promoted to general western passenger agent, at Chicago, succeeding **C. G. Orttenburger,** retired.

I. F. Schwegel, assistant general passenger agent of the Louisville & Nashville, with headquarters at Louisville, Ky., has been promoted to general passenger agent, with headquarters at New Orleans, La., to succeed **J. K. Ridgely,** deceased.

J. O. Hamilton, general freight and passenger agent on the Kansas City Southern, with headquarters at Shreveport, La., has been appointed assistant general freight agent at Kansas City, Mo., and the position of general freight and passenger agent at Shreveport has been abolished.

OBITUARY

William C. Lang, master car builder of the Pittsburgh & Lake Erie, at McKees Rocks, Pa., was killed in an automobile accident on October 27. Mr. Lang was born on January 5, 1881, and in April, 1903, he entered the service of the Pittsburgh & Lake Erie as a clerk at McKees Rocks. He became gang foreman in January, 1905, and was appointed assistant general foreman of car service in November, 1908. In August, 1915, he was appointed general car inspector at McKees Rocks, becoming pilot chief of the Electric division at Grand Central terminal for the New York Central in July, 1918. The following month he returned to the Pittsburgh & Lake Erie as general car inspector at McKees Rocks and subsequently was promoted to master car builder.

Arthur E. Sweet, who retired recently as assistant general manager of the Southern Pacific, with headquarters at El Paso, Tex., died on October 13 at El Paso. Mr. Sweet was born on October 26, 1865, at Pascoag, R. I., and entered railway service in 1883, as a messenger on the Atchison, Topeka & Santa Fe. He remained with this company until 1905, serving as a timekeeper, in various clerical positions, as trainmaster at various points, and as assistant to the general manager at Topeka, Kan. At the end of this period Mr. Sweet became general manager of the Arkansas Southern (now part of the Chicago, Rock Island & Pacific) and in the following year he became assistant to the second vice-president of the Rock Island, after which he served as general superintendent of the Southwestern district, as assistant to the president, and as general manager of the Second district. In 1916 he went with the Denver & Rio Grande as vice-president, later being appointed also general manager. After a year in other business, Mr. Sweet was made federal manager of the El Paso & Southwestern (now part of the Southern Pacific) in 1919, and in the following year he was made vice-president and general manager. In November, 1924, when the El Paso & Southwestern was absorbed by the Southern Pacific Mr. Sweet was made assistant general manager of the Southern Pacific at El Paso, which position he held until his retirement.

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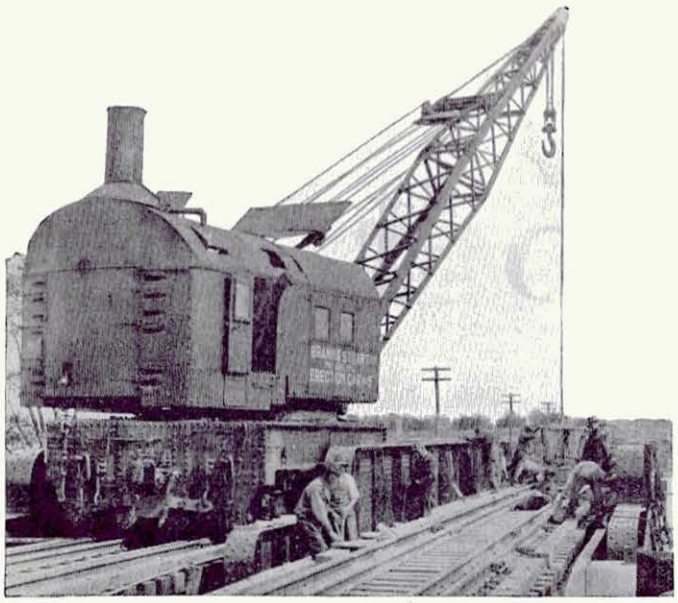

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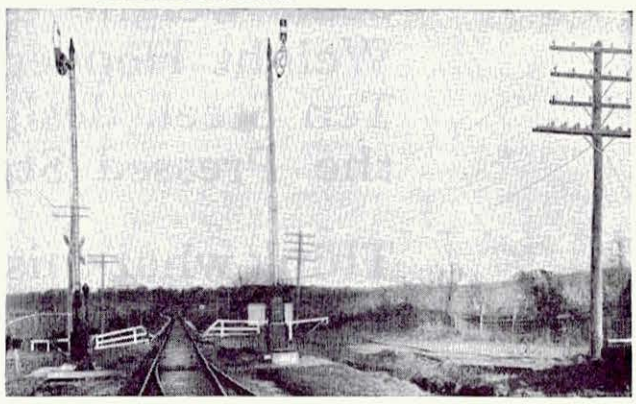

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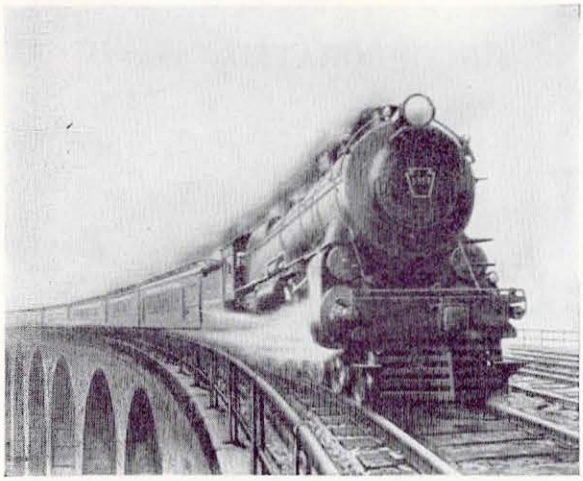

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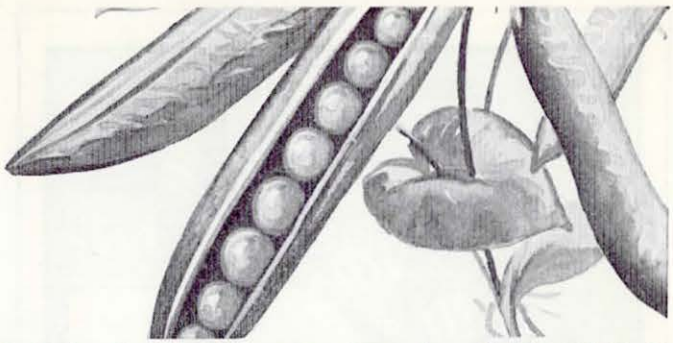

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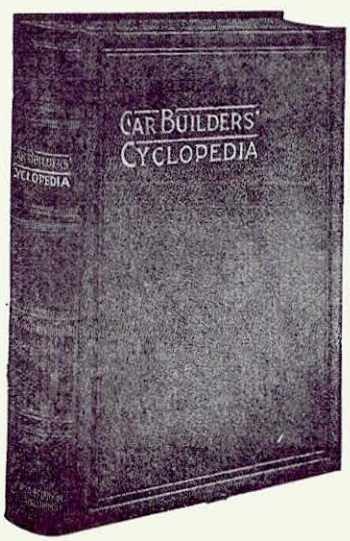

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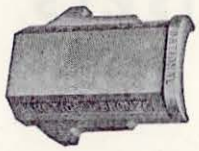

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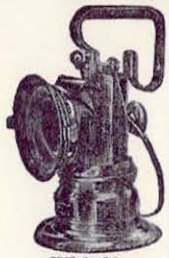

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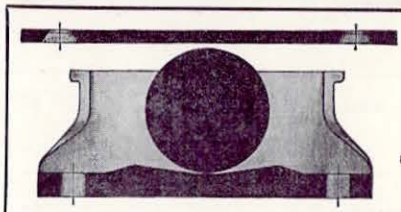

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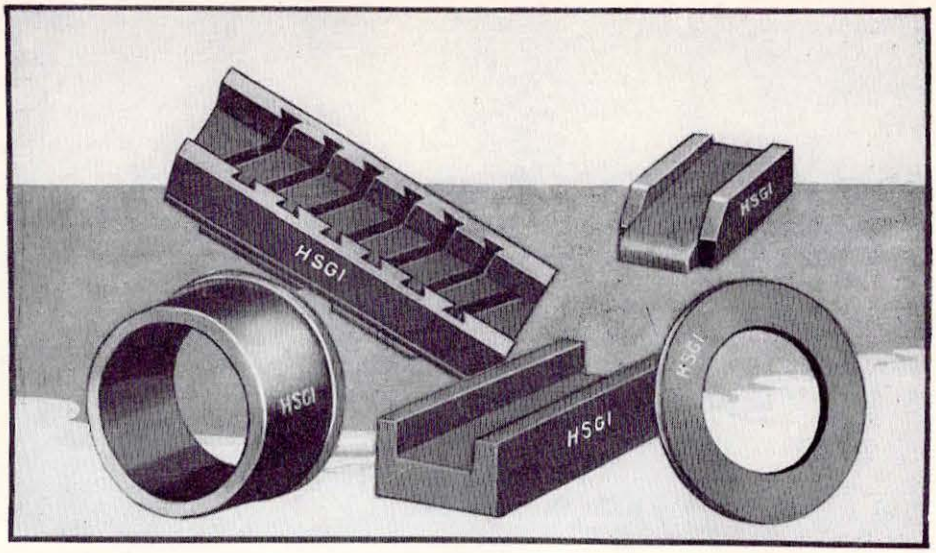

Where Resistance To Wear Means Longer Service From Many Locomotive Parts

Application of HUNT-SPILLER *Air Furnace* GUN IRON Crosshead Shoes, Outer Rod Bushings, Hub Liners, Pedestal Shoes and Wedges offers unusual savings in the cost of locomotive maintenance.

The resistance of these parts to the initial shocks and frictional wear insures longer service from practically all the parts underneath the boiler.

When made from HUNT-SPILLER *Air Furnace* GUN IRON, these parts not only make greater mileage between renewals but also help to prevent the pounds which shorten the service life of guides, crossheads, wrist pins, rods, bushings, crank pins, driving boxes and many other parts.

HSGI
Reg. U. S. Trade Mark
Cylinder Bushings
Cylinder Packing Rings
Pistons or Piston Bull Rings
Valve Bushings
Valve Packing Rings
Valve Bull Rings
Crosshead Shoes
Hub Liners
Shoes and Wedges
Floating Rod Bushings
Parts Finished For Application
Dunbar Sectional Type Packing
Duplex Sectional Type Packing for Cylinders and Valves
(Duplex Springs for Above Sectional Packing)
Cylinder Snap Rings
Valve Rings All Shapes

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HUNT-SPILLER *Air Furnace* GUN IRON

MODERNIZED SIGNALING INCREASES TRAIN SPEED

A railroad which desired to increase the track capacity and to improve the safety of operation on a 14-mile double-track section located between two four-track sections, decided to modernize the signal layout. This section had a heavy descending grade and a daily traffic of 36 passenger trains and 24 freight trains spaced at irregular intervals.

Signals were respaced reducing the length of the automatic blocks. Searchlight type color-light signals replaced semaphore signals and provided indications of track occupancy for three blocks in advance on descending grades and two blocks in advance on ascending grades.

This new signaling layout allows adequate stopping distance with minimum spacing between following trains and by affording the engineman adequate warning to control the speed of his train, enables him to keep his train moving with safety, eliminating unnecessary stops.

Modernizing the signal layout, therefore, has improved the safety of operation and through a reduction in train delays and the elimination of unnecessary stops, has increased the speed and provided greater track capacity.

UNION SWITCH & SIGNAL COMPANY
Swissvale, Pennsylvania

GENERAL RAILWAY SIGNAL COMPANY
Rochester, N. Y.

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History in the Making

The first steam train (in 1825) was preceded by a horseman carrying a red flag for the purpose of providing a safety zone (or space interval) ahead of the train.